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SOME CLINICAL FEATURES REGARDING HAY-FEVER AND ITS RATIONAL TREATMENT.*

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The employment of the term "hay-fever" is in the generic sense, and has reference to the recognized symptoms commonly attributed to pollen.

Taught by the immature expressions of so many who have approached this subject from the physiological and clinical standpoints, it is the desire of the writer that his experience and conclusion should not be accepted at once in the light of an altogether new discovery, nor does it boldly promise in every instance a radical result.

During the past season of the hay-fever period a certain number of new cases have afforded a fresh opportunity to compare notes as to the various methods of treatment and their effects. Certainly, so far, no clear explanation as to the intrinsic condition upon which this disease depends has appeared, and perhaps it may be wise to add, such a didactic statement should not be too confidently received, owing to the various and indefinite elements that in exceptional examples serve to obscure an affection possessing so great a variety of subjective details. It is equally safe to premise that no morbid condition, medical or surgical, can assume to be positive in its descriptive details in every instance; nor is this thought to be necessary in order to establish a fundamental rule for action. "In scientific investigations," says Darwin, "it is permitted to invent any hypothesis, and if it explains various large and

*Read at the Annual Meeting of the American Laryngological Assn., Boston, May 26, 1902

independent classes of facts it rises to the rank of well grounded theory."

In the main, excluding a very minor number of cases in which a purely neurotic condition is at fault, that is connected with other reflex disorders and independent of any structural alteration that can be appreciated, it is the intention of this paper to call particular attention to an abnormality of the middle turbinated bone and its covering tissues.

It is ever stated with an emphasis born of long habit, that in the chain of hay-fever are the three imperative connecting links, viz.: the predisposing constitutional or neurotic state, the exciting irritant cause of whatever nature—whether pollen, dust, or atmospheric, prevalent at a certain season, and thirdly some physical alteration of the intra-nasal structure. These three increments constitute the tripod upon which rests whatsoever is claimed to be the association between cause and effect so far as a physical appreciation of hay-fever is concerned. Otherwise it is asked how comes it that a removal from the field of its invariable influence is accompanied by an immunity, or possessed of the identical surrounding a more vigorous physical habitude, will serve to cut short a disposition of long standing? These questions however answered would appear at first sight to lead to an inevitable conclusion as to the mere accompanying value of a local intra-nasal abnormality, unless one is careful to give to each matter its proper place in the scheme of a purely predisposing element such as is familiar in a greater or lesser degree to all diseases.

The turbinated bodies normally sensitive to vaso-motor excitement, are in some individuals curiously responsive to mental states, as is illustrated by two examples cited by the later Sir Morrel Mackenzie and Dr. John Mackenzie, of Baltimore. In the first a patient was seized by an attack of hay-fever after witnessing a highly realistic painting representing a hay gathering, and in the second where the exposure to a collection of artificial roses to a woman subject to rose cold was sufficient to establish an immediate intra-nasal congestion. Other approximate instances are sufficiently commonplace in the histories of hay-fever that relate to exact time periods of attack to cause many patients to distrust propositions to anything that may have the sound of a minor surgical operation, and leads them to seek their salvation in a climate free from the germ they have learned to be the ingredient of their distress.

The proposition that appeals to the physician is to outline a curative treatment that will allow a normal state of health to prevail notwithstanding the exposure to whatever form of pollen or irritant may commonly induce the attack. Certainly no healthy nostril should afford a resting place for the development of infection, or readily respond to extremes of vaso-motor disturbance.

The inferior turbinated appears to have received the major share of attention in the past as the offending body, and unquestionably often has been sufficient to influence indirectly the necessary irritation underlying this affection. Following the removal of its fullness by means of the cautery or snare, or the riddance of projecting spurs of the septum, irritating contact has given place to temporary and frequently to complete immunity from the periodic hay-fever attacks. In the majority of instances unfortunately the relief has not been so satisfactory, showing that in addition there have been irritable areas unnoticed and untouched. Occasionally local spots on the septum have been suspected to be the starting points in the formative career of the disease. These have received a like cautery application but without producing a result sufficiently encouraging to give much hope for anything tangible in this direction. All these surfaces are undoubtedly important as approximating a normal and unembarrassed nostril, without which the best conditions for an absolute relief could hardly be expected. Infinite antiseptic, astringent, alterative, washes and pigments have been employed with indifferent success. Such, then have been in the hands of the majority the selective treatment. So far as the theory and as far as the practice has gone, ground has been gained; many sufferers have been radically cured, more have experienced a partial but substantial relief.

The middle turbinated differs essentially in structure and function from the inferior. Constituting a considerable share of the ethmoid, these bodies stand in immediate relation to the floor of the brain; its mucous membrane is vastly more delicate and sensitive, its prescribed space is narrowly restricted and any increase in size or deviation from the normal lines brings it in contact with unyielding boundaries with accompanying pressure and obstruction to ventilation and secretion. Its thin walls easily give way to processes of inflammation with surface hyperplastic development that must react on the deeper structures composing the ramification of cell cavities. The frontal, ethmoidal, sphenoidal cells are closely influenced by any abnormal activity. Its nerve supply is

largely independent to itself and includes sympathetic branches derived through the carotid plexus. With the distribution of the olfactory, each filament is surrounded by prolongations from the dura and pia mater extending to the periosteum. It is consequently not difficult to attribute through these various anatomical conditions a wide range of symptoms such as are conspicuous in the histories of the disease in question.

As a dominant function the upper nares preside over the olfactory sense. All sapids, excepting the bitters, sweets and acids, are appreciated through this area. Aside from prolonged exposures to irritant solids or gaseous emanations, mental emotions, sexual excitements, eye reflexes, heat, light, play no small part in disturbing a vascular equilibrium. The increased inspiratory effort when the normal canal is contracted, as in the instances of hypertrophy of the inferior turbinated, or from septal deviations or exostoses, must convert this auxiliary meatus into a new and improvident functional career. Hence one explanation for the results attending the removal of these obstacles is that a proper respiration is re-established, and at once a predisposition to hay-fever is proportionately eliminated, notwithstanding the middle turbinated remains unchanged. The prevailing irritants are no longer carried through the same channel to remain impacted against this sensitive surface. It may be suggested in passing that the middle turbinated is placed nearly two inches distant from the external meatus and somewhat over an inch beyond the anterior tip of the inferior, as though apparently protected against inordinate exposures. Again, a nostril that is permanently and effectually plugged, as by large polypi, is rarely effected with the full symptoms of hay-fever—inasmuch as no air passes within, no external irritant can be drawn with it to excite acute inflammation of these structures. Other symptoms, however, are likely to prevail which are more or less germane to the subject, and concerning which much has been written suggestive of a phase of vasomotor derangements. I refer to the relation of asthma to nasal polypi and also hay-fever. Here, too, opinions are somewhat at variance and perhaps somewhat vague, I cite from H. L. Swain: "Shall we consider that the nasal condition produces the asthma—cause and effect—or are both the outcome the result of some depraved condition of the general system which has outward expression of these two diseased conditions?" It is not proposed to take up this issue in the present discussion beyond declaring

the belief that, as an accompanying feature of hay-fever, its determination is as clear as that of the underlying intra-nasal affection itself.

Since 1819, when the first descriptive account of hay-fever was published, by Bostock, up to the time of Blackley, '73, and Beard, '76, the pollen theory appears to have been that most generally accepted. With Pierrie, '67, and Beard came the additional emphasis relating to the subjective state of the patient as impelled by a neurotic disposition. Daly, Hack, and Roe about the same period, '82-'83, began to point to an intra-nasal abnormality as a necessary complement. In '84 Morrel Mackenzie, after carefully summing up the various theories and fortified by his personal experiences, declared unhesitatingly that "pollen is the essential factor in the case of those who possess the peculiar predisposition." Concerning the combined causes, viz., heat, light, dust, ozone, benzoïn, over-exertion, he proceeds to add: "Several writers have contended that althought any one of the above causes may not alone be sufficient to produce hay-fever, several of them acting together may be able to do so. Such theories are the last resources of those who are unable to discover the true etiology, and there is not a little of evidence in their support."

If it is remembered that, practically, it has been hardly twenty-five years since pathological states of the nasal organs have assumed a wider significance, it is realized how impossible it has been to the earlier students of this affection to reason as to cause and effect principles in a manner that should be convincing. So it is that with the three assumed cardinal necessities—that of external surrounding, the central nervous system, and some indefinite local state, the attention has been so greatly distracted as to open the way to discussions that are endless in their variety and to a conclusion as yet unformed. Beard in his day was ready to acknowledge that there was no individual pollen that would arouse this disease into activity; consequently there were idiosyncrasies so multiple as to include dusts of many descriptions combined with weather conditions to make them potent. At the present this is not contradicted, but as if to render the field still more subtle, with an unclassified neurotic state is now frequently combined a gouty or rheumatic disposition. In other words it seems necessary to spell out a causation that will meet the requirement of each class of cases, but lacking in any general rule under which a specific action could be taken.

If it is true that the entire principle of hay-fever resides in an acute inflammatory process of the middle turbinated structure, and if this susceptibility to the influence of external irritants may be removed, the scrupulous avoidance of pollen and the constitutional remedies addressed to the nervous diasthesis will easily have passed into a category of things of an altogether secondary value.

When so important an issue is at stake and where substantial proofs may be most difficult to furnish at the outset, it is clearly the part of prudence that one should be sufficiently confident of one's ground before venturing to pronounce decidedly in a matter that has vexed for so long many and the most careful observers. It is possible that others have trodden the same path before, but judging from the discussions that followed a paper on this subject at the last annual meeting of the society, I make bold to appropriate the definite views as expressed in this communication.

Originally rather accidentally, but within the last three years more systematically, the writer was led to devote particular attention to symptoms believed to originate in hypertrophic conditions of the middle turbinated. As is well known hypertrophy here is common to patients who bring their ailments to the clinics of a special hospital. When this state is sufficiently advanced and not greatly complicated by other obstructive lesions, without too pointedly questioning, it is found that there is generally a feeling of stuffiness often amounting to a sense of pressure, a frequency to head colds with frontal pains, the voice lacks a true resonance and there is unmistakable evidence of impeded functional activity. In the development of a somewhat acute stage the symptoms become marked; the irritation is out of proportion to the ordinary so-called cold, the hydrorrhea is more extreme and viscid and bathes the upper nasal region; a dry cough frequently eventuates—in fact the local signs begin to approach more closely to those of genuine hay-fever. Stimulating applications are said to burn like fire and do not produce the speedy reduction of the swollen erectile tissues, but if anything appear to aggravate the discomfort. In addition the tracheal wall will often exhibit a redness easily appreciated. In short this picture might stand sufficiently well for hay-fever of a minor degree were it not that the attacks are not periodic nor occurring at a suitable season, nor running an equal time limit. For all that I take it that the process is identical and only modified by subjective variations that tend to intensify and prolong the term of acute inflammation. In another instance a con-

dition of perennial congestive activity, simulating in almost every detail the periodic type, is occasionally witnessed. Surely here no pollen theory, nor properly speaking, a neurosis can be introduced to satisfy the time-honored theory of causation. As an illustration the following history is introduced: Three years since a patient, a woman about 40, living in the country, was referred to the Metropolitan Throat Hospital by Dr. Fayette Smith, of Newark, with the statement that in his attendance upon her he had included of pretty nearly every method recognized in the vocabulary of treatment, and at the end of his resources he had delivered her into our hands. In the patient's language her state was beyond compare. During the preceding two years her condition at the best was wretched enough, but with the exacerbations almost unupportable. Occluded nostrils, throbbing frontal pains, lachrymation, hydrorrhea, violent sneezing, with asthma super-added were all in active evidence at her visit. It was with the greatest difficulty that a satisfactory examination could be made, owing to the rhinal congestion. A sufficient but not great hypertrophy of the middle turbinated was brought into view developing in each nostril. In every direction this case appeared to answer to the periodic hay-fever history, excepting in the continuousness of the suffering and of course lacking in the usual exciting causations. The anterior portion of the middle turbinated was removed from the side most occluded, and on a return visit a few days later the patient expressed herself as having received a relief almost magical; her asthma having largely disappeared and the nasal trouble vastly relieved. Some six months later on a moderate recurrence of the symptoms, the opposite nostril was subjected to the same operative treatment. In a recent interview the writer was assured that her former disabilities had radically disappeared and further advice was considered unnecessary. As an incident it should be added that the greatest suffering was experienced during the period recognized as the usual hay-fever term.

An additional case, contrasting somewhat with the above, but equally striking in its intensity and apparent relief, is cited: Mrs. S., referred by Dr. R. O. Born, of this city, a lady of highly nervous temperament, called at a late hour of the evening, impelled by suffering that had passed beyond endurance. The distress from the pain, eternal sneezing and hydrorrhea was such that she had no rest by day, and at night sleep was rendered impossible. These symptoms had progressed increasingly during several days. A

small, fleshy, intensely red tongue of hyperplastic tissue, movable by a protected probe was visible projecting from the middle turbinated of one side, the other being pretty nearly of a normal. As she expressed a decided dread of operative interference, a small pledget of cotton moistened with a cocaine solution was placed lightly against this turbinated in the hope of gaining some temporary benefit. Two days later, having failed to acquire much relief from continued treatment of this character, the patient permitted the use of the snare with which the anterior face of the middle turbinated was removed. Within twelve hours the intensity of the attack had begun to subside and in the sequence a rapid and entire disappearance of all disturbing symptoms. It is seen that between the chronic perennial and the acute paroxysmal there are but few marks of history variation, unless, perhaps, the additional liability to asthmatic complication is considered an accompaniment not unusual with the former.

In addition to a considerable number of cases somewhat loosely classed as chronic vaso-motor, in all more than twelve cases of typical paroxysmal hay-fever of every grade of severity have been subjected to the test of this operation. With some few it must be confessed that the results have not been attended by absolutely brilliant success, but in every instance a most positive benefit has followed, and in the larger proportion a practical immunity has been secured. If some disappointments may have been felt in a failure to obtain ideal effects in each case, it is most firmly believed that the fault has arisen through the inability to complete the full intention of the operation, owing to a difficulty in gaining a visual field in nostrils greatly contracted. It has happened in several instances that at the time of operating no view whatsoever of the turbinated could be secured, although the surmise of hypertrophy was amply demonstrated by the result. As an emphasis, the treatment has not been in any way confused by the administration of other local or constitutional remedies.

So far, then, within this experience, there has been no exception where the presence of hay-fever has not been associated with middle turbinated hypertrophy, and the removal of which has seemed to demonstrate clinically a most decided arrest in the chain of vaso-motor excitement. It is unnecessary to speculate concerning the rôle played by the pollen theory, if by ablating the morbid structure to which it is responsive, no unusual liability to inflammatory action will ensue. I find, moreover, in some quarters, a

disposition to inquire more determinately into the traditional causation so open to laboratory investigation. Without comment I quote from the following extract: "During the past few years the pollen theory of hay-fever has attracted considerable attention and many adherents have been added thereto. In this connection the recent work of B. Heyman and T. Matzschata (*Zietschrift für Hygiene u. Inf.*, Nov. 22, 1901), is of interest. They first inquire into the quantity of pollen particles in the air during the season of the year when hay-fever is prevalent. They found only a very small number of such particles are present in the air; in the average of 25 to each cubic meter. The bacteriological examination of these particles shows that they contain only a very small number of micro-organisms. Only from one to five organisms are present in the pollen from one blossom. They next examined the nasal and throat secretions of healthy persons, hay-fever patients, and individuals suffering from various other affections. The hay-fever patients showed less pollen in such secretions than any other persons examined. With respect to the micro-organisms present, they found that staphylococci predominated in the nares of persons suffering from other nasal affections, while in hay-fever patients streptococci were most abundant. They conclude that the pollen theory of hay-fever is untenable. They are undecided as to the bacterial excitement and mode of transmission."

While progressing in the lines of the operative indications the snare alone was depended upon to secure the ablation of the hypertrophied tissue. If a portion of the bony structure of the turbinated was included it was thought not to be a disadvantage. Owing to difficulties of conformation or lack of skill, the results were occasionally clearly insufficient, and although yet the wire loop is invariably employed as a preliminary, seizure forceps are considered indispensable to complete the radical removal of all hypertrophy. The bone is denuded throughout its presenting surface quite to the angle formed by the cribriform plate. Unless carried beyond this point the matter is essentially simple, requiring a few moments only, and under cocaine and adrenalin practically painless and bloodless. The exceptional instances where the turbinated itself is strongly deflected, laminated, or cystic, must be dealt with after the manner that would appear advisable under the circumstances to insure a freedom from contact. In a like sense the thickened tissue along the sides of the turbinated, if necessary, to the same purpose should be removed. These additional steps, however, would seem rarely to demand attention. It is a cautionary suggestion that the operator may have himself to blame for a failure where the error will easily lie in an absence of thoroughness in securing the purpose for which the operation is effected. In the place of the hypersensitive and erectile, a cicatricial and firm tissue furnishes a protective covering that should remain immune to ordinary causes of irritation.



AN OPERATION FOR THE CORRECTION OF DEFLECTIONS OF THE NASAL SEPTUM.*

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

When an operation for the correction of a deflection of the nasal septum results in failure, the history usually is that immediately after the operation, the septum was in the median line, but that gradually the parts sprung back into the former abnormal position as the result of the resiliency of the septal cartilage.

In October of 1896, an operation was described by me: Probably still the best method of counteracting the resiliency of the septum; the main cause of failure in all operations for the correction of deflection of the nasal septum.

The operation consists of a -shaped incision around the deflected area. The vertical Crura of the  are made as long as possible, in order to take advantage of the leverage which the resiliency exerted at the neck of such a quadrelateral flap has to overcome in order to spring the lower edge of the flap back into its former abnormal position.

This very important principle of leverage may be demonstrated practically by flaps of various shapes cut in the side of a rubber ball or sheet of India rubber, because the resiliency of the septum is comparable to that of India rubber. It will be seen that when a quadrelateral flap is long and narrow, that it will remain almost without support in any position into which it may be thrust by the finger; while a short wide flap springs back into its former position as soon as the pressure of the finger is released. It will be demonstrated also that the rule that—the longer the flap the less the resiliency at its lower edge—does not apply to triangular flaps, because the width of the neck of a triangular flap, increases with its length, and hence the tip or angle of even a long triangular flap cut in India rubber or septal cartilage, when bent, springs back into its former position immediately that the pressure is released.

*Read by request before the section on Laryngology, Rhinology and Otology of the Medical Society of the County of Kings, Brooklyn, N. Y., May 22, 1902.

In traumatic deflections when a -shaped incision is made about a deflected area in a septum, the original traumatism in a large proportion of cases is practically reproduced, and it is almost the same as if there was a recent dislocation to reduce. It is not exactly the same, because during the years that the cartilage has remained dislocated it has assumed a new shape, and hence when the deflected area is reduced or set into its normal position its resiliency tends to spring it back into its former abnormal position. However, during the years that the triangular cartilage has remained dislocated new tissue has formed which represents the so-called redundancy of deflected septa, so that when the quadrelateral flap is pushed through the septum into the median line, this redundant tissue overlaps the edges of the -shaped incision and serves the purpose of a splint which is adequate in rather more than 80 per cent of cases to maintain the formerly deflected area in the median line during the healing process. During the healing process this new tissue disappears gradually, as the result of absorption and pressure neurosis; therefore, it is rarely necessary to cut away any of the redundant tissue. In practice, I cut away at the time of the operation or shortly afterwards a portion of the redundant tissue only in cases where it is sufficiently great to entirely occlude the formerly unobstructed nares.

What has been said above as to the disappearance of redundant tissue also applies, to a considerable extent, to lesser and irregular deflections of the septum after the main deflected area has been brought into the median line. The condition of such areas either improves spontaneously as the result of adequate breathing space, or, if pressure symptoms persist they are readily dealt with by removing a portion of the septum with a saw or by using the snare or galvano-cautery upon a hypertrophied turbanate. However, if necessary, trifling modification of the operation may be devised to meet unusual cases. For example, I am attending at the present time a man whose right naris is nearly occluded by a deflection of the anterior portion of the septum extending back three-quarters of an inch. The left naris posterior to this deflection is greatly narrowed by a bulging of the septum toward the left. I attempted by a pulmonary operation, to improve the condition of the left naris by sawing away a portion of the bulging area and have made matters worse, as the result of a bridge or senecchia that has formed between the septum and inferior turbinal. This senecchia has been treated by the insertion of a strip of rubber between the turbinal and the



septum, with the usual unsatisfactory result. When the deflection of the septum into the right naris is operated on I shall make my [] incision in the usual manner. Before thrusting my quadrelateral flap into the left naris, I shall push my fingers into the left naris, and bring the posterior portion of the septum into the median line by fracturing the posterior edge of the [] shaped incision. Then when the quadrelateral flap is pushed through the septum into the left naris it will hold the posterior portion of the septum in the median line, and no tube or other support probably will be required in the left naris.


The technique of the operation is as follows:

A saw is introduced flatwise into the obstructed naris, and a cut is made horizontally beneath the bulging area until the saw has penetrated somewhat deeply into the bone and cartilage. The direction of the saw is somewhat rapidly changed nearly to the vertical, and the sawing continued until a gush of blood indicates that the septum has been penetrated. The tip of the saw is then thrust through the opening in the septum, and the anterior crux of the [] shaped incision rapidly made by sawing upward with the tip of the saw. However, the anterior crux of the incision is sometimes advantageously made with a knife. In fact, the whole incision might be made with a knife. The advantage of the saw is that at the base of the deviation the hard bony nasal processes of the superior maxillary are generally encountered, and are more easily penetrated by a saw than a knife; while the cartilage through which the anterior crux of the [] shaped incision passes is equally well cut either by a saw or a knife.

After the anterior crux and base of the [] shaped incision about the deviation has been made in the manner described, a short, probe pointed double-edged knife curved on the flat, is thrust through the cut in the septum from the right side (patient's left naris). The forefinger or little finger of the left hand is then introduced into the patient's right naris, so that the probe point of the knife rests on the tip of the finger. Finger and knife are now thrust backward through the nose, so that any tissues at the base of the [] shaped incision that have escaped the saw are severed until the posterior border of the deviation is reached. One edge of the knife is now turned upward, and the posterior crux of the [] shaped incision made as high up as possible upon the septum. The posterior crux of the incision is usually through bone, and it is necessary in order to sever it, to employ lever like movements of the knife, the tip

of the finger within the left naris on which the probe point rests, acting as a fulcum.

The -shaped incision about the deflection has now been completed, the whole procedure occupying less than one minute. It yet remains to thrust the deflected area through the septum. If Senechia exists they should be broken down with the saw, which is best done immediately before making the  shaped incision. The forefinger, in children the little finger, of the operator is dipped into steril water and introduced into the patient's obstructed naris. For the left naris the right forefinger is employed; for the right naris the left forefinger. With a semi-rotary motion the finger is passed into the naris beyond the deflected area. If as the result of defective technique the posterior crux of the incision has passed through instead of beyond the deviation the posterior edge of the incision is broken and dislocated into the median position. The finger tip is then thrust beneath the quadrelateral flap into the other naris, and brought up along first the posterior and then the anterior crux in order to ascertain that the edges of the quadrelateral flap have cleared themselves to the full extent of the incision. An effort is then made to break the neck of the flap by pressing the fingers violently upward beneath it. If there be bone in the neck of the flap, it breaks with a snap sometimes audible across a large room, and the operator may feel assured of the success of his operation: because broken bone not only remains where it is placed, but acts as a splint for the cartilaginous portion of the neck of the flap which always it is impossible to break.

This manipulation of the flap with the finger tip is of the utmost importance, and I depend rather upon it for the success of my operations than upon the support produced by the overlapping of the edges of the quadrelateral flap which is only adequate to prevent a reproduction of the previous condition after the most thorough bending of the flap. As for any incidental beveling of the edges of the  shaped incision, as a means of increasing this support, it is of so little consequence as to scarcely deserve mention.

If there be any advantage in my operation over others, it is because there is only one flap to bend, and that is so situated that bone is usually encountered in the neck of the flap which can be fractured, or if the deflection is so situated as to permit, the posterior suture of the triangular cartilage may be dislocated, and the resiliency of the neck of the flap suspended during the healing pro-

cess. Under such circumstances, the edge of the flap is anterior, and its crura nearly horizontal.

After the deflected area has been brought into the median line, the patient is requested to blow the clot from the formerly obstructed naris, and a tube is dropped into the naris. It should fit very loosely. In more than 80 per cent of cases it is allowed to remain only over night to control hemorrhage rather than as a splint. I prefer the modification of Allen's tube made by myself, but the tubes of Kyle or Meyer are equally practical, and the matter is of no consequence whatsoever when the tube only remains in the nose over night. If I were certain at the time of operation that more support would be required than that afforded by the over-lapping edges of my quadrelateral flap, I should follow the teachings of Roberts, Seiler, Watson and Gibb, and employ a pin rather than a tube; because when support for a length of time is required the pin causes far less suffering than the tube. The same is true of a stitch.

All of my operations for deviation of the nasal septum were done under cocaine anaesthe, most of them in my office at night at the conclusion of my evening office hours. After the tube is inserted, the patient is simply instructed to call at my office in the morning. The tube is then removed, both sides of the nose cocaineized, inspected and sprayed with menthol-camphor-alboline. If there is the slightest tendency at this or subsequent visits for the deformity to reproduce itself, the tube is reinserted and worn as long as necessary. This wearing of the tube in the few cases in which it is necessary, causes vastly more distress and inconvenience than the original operation. At the end of about two weeks the patient is instructed to attempt the removal, cleansing and reintroduction of the tube for himself. If, under such circumstances, the operation is a complete failure, it is the result largely of the patient's neglect. After the third week, the tube should be worn for half an hour or so twice a day for two or three months. Many of the "tube cases," while entirely satisfactory to the patient, inasmuch as adequate breathing space has been secured, are not entirely successful. By an entirely successful operation, I mean one in which six months after the operation the entire septum is as true to the median line as if it had been placed there with a plummet, or if there be any deviation it is toward the formerly unobstructed naris. In one of the cases shown at the section of Otology and Laryngology of the Philadelphia College of Physicians in 1896, when I read my first paper on this operation, the deflected area of the septum was some-

what toward the formerly unobstructed naris. Two or three years afterward, the entire septum was exactly in the median line. To bring about this result, the resiliency of the septum must have been active for a long time. In two of my "tube cases" the result was sufficiently unsatisfactory to necessitate the reperformance of the operation. I have heard of others that have passed from my observation soon after the operation where the failure was more or less complete. It should be born in mind, however, that "tube cases" comprise less than 20 per cent of the cases operated on.

The most satisfactory cases are those where the obstruction of the occluded naris is complete, because in such cases there is abundant redundant material to serve as a splint. The operation is more satisfactory in cases where the deflection extends well back upon the septum, because the neck of the quadrelateral flap then usually contains bone. For the same reason the operation is more satisfactory in mature adults than in young adults and children. The septal deviation of children are almost all "tube cases."

In contrast to deflections involving a considerable area of the septum, are the so-called vertical deviations, where less than a half inch of the anterior portion of the septum is involved, and consequently the deflected area can be converted into a very long narrow flap. In such cases, because of the powerful leverage, the resiliency at the neck of such a narrow flap has to overcome in order to bring the lower edge of the flap back into its normal position. It is only necessary to push the flap through the septum without thoroughly bending the flap. In such cases, Myles has modified my operation by preserving intact the mucous membrane of the concave side of the deviation.

The accidents at the time of the operation or subsequently have been few and unimportant. Hemorrhage in a few cases has been so abundant as to necessitate packing both sides of the nose with cones of absorbent cotton saturated with peroxide of hydrogen, instead of inserting a tube. I have observed two cases of secondary nasal hemorrhage each about one week after the operation. There have been two cases in which there was a small perforation so far back upon the septum as to cause no symptoms, and somewhat numerous cases in which a small particle of bone has come away, probably a portion of the nasal process of the superior maxilla. A slight rise of temperature, and some sore throat due to mild sepsis has occasionally occurred about the third day after the operation; but has quickly subsided in all except one case, where the frontal sinuses were evidently involved, and frontal headache persisted for some months.

A SIMPLE METHOD OF CORRECTING CERTAIN DEFORMITIES OF THE NASAL SEPTUM.*

BY GEORGE FETTEROLF, A.B., M.D., PHILADELPHIA.

The pathology of deformities of the nasal septum can be expressed in two words: Redundant tissue. Were there no excess of tissue, there could be no deformity. The term redundant tissue is here used in its strictest sense, and signifies more tissue than is necessary to give us a septum which runs in a straight line from margin to margin. In many forms of disease the systematic writer finds difficulty in accurately classifying, and his truth applies in all its fulness to the nasal septum and its malformations. With this reservation in mind the following classification appears to the writer to cover the situation from the practical standpoint:

1. Deviation without thickening.
2. Deviation with thickening.
3. Thickening without deviation.

1. Deviation without thickening. From a strictly accurate point of view this condition rarely exists, for when the septum leaves the midline there is almost certain to be developed a greater or less degree of irritation or inflammation on either the projecting or the receding surface, which results in hypertrophy of the displaced tissue. There is likely also to be thickening at the lines where the displaced portions join those segments which still remain in the median nasal plane. From an operative standpoint, however, this condition is found in a not inconsiderable number of cases with which we have to deal, and variations are found all the way from the slight concavo-convex septum, which causes few, if any, symptoms, to the extreme angulation or curvature which brings the convex side in contact with the outer nasal wall and causes absolute atresia of that side. In some of these cases the upper and lower portions of the septum are properly placed, and the offending region is in the middle. In others the upper four or five-sixths may form a plane which lies at an acute angle with the normal plane of the septum, and which joins the lower one or two sights

*Read at the Eighth Annual Meeting of the American Laryngological, Rhinological and Otological Society, held at Washington, D. C., June 2, 3, and 4, 1902.

at an obtuse angle. In others the lower portion is in its proper position, but the region opposite the middle turbinal and upper part of the inferior is out of place. In still others we find the double curve.

2. Deviation with thickening. In this form the most common varieties met with are an angular condition, with a marked ridge on spur at the angle, and a concavo-convex deviation with a general thickened condition of the displaced portion.

3. Thickening without deviation. This group comprises those septa whose cartilaginous lamellae have separated, and that numerous class of spurs, ridges and irregular protrusions.

The result of a rather modest experience in straightening septa has shown me in the first place that there is no one operation suitable for all cases. In the second place, I have learned that the most difficult cases to remedy are those included in the first and second classes, (for the latter can be converted into the former by removing the projecting growth), in a word, those septa whose antero-posterior or vertical measurements are greater than straight lines connecting their margins and whose surfaces are approximately parallel.

The difficulties or problems to be solved can be briefly expressed, as follows:

To get the septum over to the middle line, and to keep it there. In order to get it over to the midline there have been suggested numerous methods which can be grouped under three headings, crushing operations, flap operations and resection operations. The most widely used of these are the Meyer-Asch flap operation, the Watson-Gleason flap operation, the communicating operation of Roe, and the communicating operation of Kyle, in the last of which the pulpefaction is aided by knife or saw cuts into the septum, thus converting it into soft strips which can be readily pushed over or beyond the midline. While these have scored brilliant successes, and have been advocated and practiced by many, there are still a number of failures which cannot be ascribed to faulty performance.

To get a septum over to the desired median position is usually a simple matter; a few saw, knife or scissor cuts, a flap or flaps pushed over, or the septum crushed and the result is accomplished. Our retentive apparatus is satisfactory, particularly since the introduction of malleable tubes. My experience has been that in a certain proportion of cases for a while after the operation all goes well. Then, in a week or so, the patient begins to complain of pain, or the

tube shows a tendency to project from or into the vestibule. We look into the nose and we notice that our flat surface is becoming convex again, that a marked concavity is beginning to develop on the previously concave side, and that what seemed so brilliant a result on the operating table is not so satisfactory after all. The septum has begun to regain its vitality and become firm and is healing into its original condition. This tendency to return is blocked by the nasal tube, which is now fulfilling an improper function, that of a pressure apparatus, and not a retentive splint. Or perhaps the tendency to return is delayed for a time, and does not manifest itself until the splint is finally removed. The trouble is that we have too much septum for the space. *We have a ten-foot partition and a nine-foot ceiling.*

We can safely say that the seats of resistance to a permanent median position are three in number, the two marginal attachments of the septum and the most prominent point of the deviation. Even in those cases of mine that have been either partial or absolute failures, I know that I have broken up the marginal resiliency, and I feel sure that the result would have been good, but for the fact there still remained too much tissue at the point of greatest deflection.

Another point. I think that all will agree with the statement that the less cutting or crushing of the septum there is done, the better chance is there of retaining vitality and less likelihood is there of perforation or of the formation of inflammatory exudate, which would only add still more to the excess of tissue. And, if while straightening the septum we can keep intact the muco-perichondrium of at least one side, we will have retained a structure that is of value both as supplying nourishment and as forming a splint. We come naturally, then, to the conclusion that an operation which will remove redundant tissue, which will necessitate a minimum of laceration, and which will not affect the muco-perichondrium of one side, has certain undoubted advantages.

The main difficulty I have experienced has been in removing the excess of tissue. The quota of cartilage or bone, or of both, to be removed, must naturally be larger on the convex side than on the concave, and its removal necessarily results in a V-shape gutter. Kyle, in his book, suggests removing a V-shaped piece in deflections of the cartilaginous septum, and recommends dissecting up a flap of mucous membrane, and by means of two converging knife cuts, excising a strip which is removed by a blunt dissector or by

the finger nail. This strip I was unable to remove satisfactorily, either as regards the angle of the V or the depth to which it should go, and when the deviation included the bony septum, I was unable to do it at all. I therefore devised a little saw-file for accomplishing the purpose, a description and cuts of which were published in *American Medicine*, March 1st, 1902. These instruments I take pleasure in showing. The description is quoted from the afore-said article:

"The instrument may be called a saw-file, as it comprises the elements of both a saw and a file. The edge is curved, and consists of a series of teeth, half of which cut when the instrument is pushed, and the other half when it is pulled. These teeth are prolonged up the sides, which are curved on the flat, and which consist really of a series of planes, the distal half cutting when the instrument is pushed, and the proximal half when it is pulled, similarly to the edge. The back is smooth and flat, with rounded edges.

As the amount of tissue requiring removal varies in different cases, the instrument is made in three sizes, the cutting sides meeting at an angle of 40° , 55° and 70° , respectively. In the first two the distance between the back and the tip of the most prominent tooth is 5 mm. The one of widest angle is required where the deviation is greatest, and to facilitate its introduction into the narrowed nostril, the distance between the back and the most prominent tooth is reduced to 3 mm.

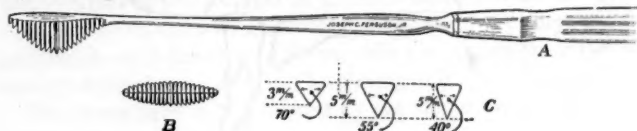


Fig. 1. Author's Saw-file.

The accompanying cut (Fig. 1) will readily illustrate the text. A represents a side view of the instrument as it lies on the wall. B is a face view, or architecturally speaking, a plan of the cutting part, and shows very clearly the arrangement of the teeth; and C is an elevation or cross section of the three different sizes, showing the angles at which the faces meet and the distance from the most prominent tooth to the back. The instrument was made for me by Joseph C. Ferguson, Jr., of Philadelphia, Pa."

My *modus operandi* is as follows:

General anesthesia is always used, and while the anesthetic is being administered, the septum is painted with a solution of adren-

alin chloride. When anesthesia is complete a finger is introduced for the double purpose of exploration and of pushing the septum sufficiently toward the midline to permit of the introduction of the saw-file. This finger is then withdrawn, and with a finger in the concave side to act as a guide, either one or two grooves are cut through the septum, as far as the perichondrium of the opposite side. If but a slight amount of tissue needs to be removed, one groove is sufficient; if a greater amount, either two grooves are cut at some distance from each other, thus converting the septum into three strips, or else a file of wide angle is used. If the deflection is extreme sufficient will not be removed if only the convex side be attacked, and to obviate this an additional incision, (Fig. 2),

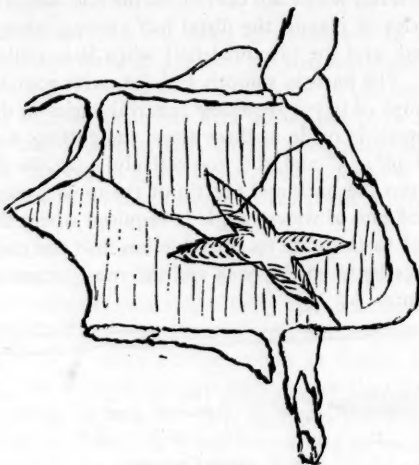


Fig. 2. To illustrate direction and position of cuts in antero-posterior redundancy.

as is recommended by Kyle, is required on the concave side. This is usually made at the point of greatest angulation. In this instance, of course, the muco-perichondrium of the concave side is not allowed to remain intact. To make and to remove a still wider strip, I have had a set of the saw-files truncated. The first cut or cuts can be made as usual, and then the additional tissue is removed by using the truncated instrument, which will widen the groove, and at the same time the blunt edge will push the muco-perichondrium ahead of it without laceration. This, of course, does not remove any of the antero-posterior excess, and is, therefore, not

an ideal operation. While the results so far have been quite satisfactory, in the future, whenever the conditions will allow it, I shall make the cuts so as to cross each other, and thus remove this antero-posterior redundancy. (Fig. 2.) When this is extreme a portion of cartilage should first be removed by the resection method of Ingals, as advocated recently by Freer, and the operation completed by removing V-strips *p. r. n.* After the grooves are satisfactorily made, the Adams forceps are introduced and pushed to the floor of the nose. The lower fragment of the septum is broken from its basal attachment and twisted toward the opposite side—over-corrected. The other segments are then pushed over, and if two cuts have been made, a slight amount of pressure with the finger will be sufficient. The operation is finished by the introduction of a Kyle's tube. In this way is secured a correction with very little trauma, with frequently an intact muco-perichondrium of one side, with removal of redundant tissue and with breaking up of resistance at the three essential points, upper margin, lower margin and point of greatest projection.

The after-treatment consists in the first place in watching the patient carefully for six weeks following the operation. Unless there arise points of tenderness or irritation in or around the nose, the tube is not removed for five days. It is kept clean by spraying with a warm alkaline solution, which is followed by some bland oil, and is removed and cleansed at intervals ranging from two to four days. Should there be evidence of pressure at any point, the tube can readily be indented to accommodate the projection or the edge can be trimmed away should it be cutting into the soft parts.

The advantages to be obtained by the use of the saw-file can be summarized as follows:

1. No preliminary dissection of the mucous membrane is required.
2. A properly-shaped strip of tissue is removed.
3. The strip is quickly removed, so that prolonged anesthesia is not required.
4. The margins of the cut are exactly parallel, and thus accurate coaptation and quick union are promoted.
5. The bony septum can be attacked as satisfactorily as the cartilaginous.

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SOME MODIFICATIONS OF THE AUTHOR'S ORIGINAL V-SHAPED OPERATION FOR CORRECTION OF DE- FLECTION OF THE SEPTUM.*

BY D. BRADEN KYLE, M.D., PHILADELPHIA.

In operations for the correction of the various deflections of the nasal septum, it has been my experience that the greatest difficulty to overcome was not that of placing the septum in the median line, but in removing sufficient tissue to prevent any backward pressure on the septum, and a consequent return of the deflection. For the past six years I have been removing a V-shaped piece, or a number of V-shaped pieces, according to the deflection and amount of redundant tissue to be removed, from not only the cartilaginous, but also the bony septum for the correction of various deflections. The operation described in my book on pages 256-260 explains the V-shaped method as applied to certain forms of reflection. In a paper which I read before the American Laryngologic, Rhinologic and Otologic Society at Cincinnati in 1899, I recommended that in the majority of cases in which deflection occurred, this V-shaped operation should be used, and I have since concluded, and after operating on 152 cases by this method, I am convinced that it is one of the simplest and best methods for the correction of almost all septal deflections.

I first used a small, curved saw for making the incision, cutting out the wedge-shaped piece at the greatest point of deflection and redundancy, and making a simple saw cut at any other point on the septum necessary to allow it to be forced into line; this not only applied to the cartilaginous, but to the bony septum as well. The incision, either V-shaped or simple, was carried almost entirely through the cartilage or bone; this allowed of the molding of the septum into whatever position was desired, and also controlled the line of fracture when necessary to use the crushing forceps. For the past three years I have used almost entirely this V-shaped method, and out of the 152 cases I have had only 11 cases in which the operation was not entirely successful, and in each instance the failure was due more to complications than to the method. In

*Read before the Section on Otology and Laryngology of the College of Physicians, Philadelphia, May 21, 1902. *American Medicine*, Vol. III, No. 22, 1902.

no cases have I had perforation. By cutting out these V-shaped pieces, as shown in Fig. 1, the redundant tissue is removed, and if the V-shaped cut is made at the base of the septum so as to prevent any tendency to backward pressure, with one or two cuts made above, as shown in Fig. 1, and the septum supported by means of a metal tube, no difficulty will be experienced in retaining the septum in position.

To simplify the classification of septal deformities I will speak only of two varieties: 1. Septal deflections without external deformity; and (2) septal deflections with external deformity.

When the deflection begins at the base of the septum a V-shaped cut should be made on the concave side of the deflection close down to the floor of the nose (see Fig. 1). In making this V-

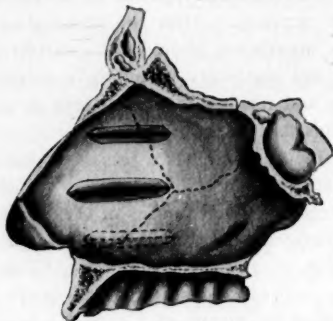


Fig. 1.

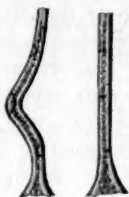


Fig. 2. Fig. 3.

The V-shaped cuts are diagrammatic only. The position and direction of cut will vary in different cases. The dotted line indicates where the cut should be made on opposite sides.

shaped cut the amount of tissue to be removed depends upon the angle of the deflection, care being taken to remove sufficient tissue so that when the septum is placed perpendicular there will be no backward pressure and the surfaces will come together as shown in Fig. 3. As many more incisions should be made as are necessary to break up the resiliency of the septum, so that it will swing freely from the top. These incisions may either be made by the thin curved saw blade, or if the redundancy is extensive and the curvature in the septum is pronounced then the V-shaped incision should be made. The rules governing the incision are based on (1) the breaking up of the resiliency of the septum by the removal of the V-shaped piece or pieces and simple saw in-

cisions, and (2) observing the blood supply and carefully avoiding the cutting off of any portion of the septum and its mucous membrane by parallel cuts on the same side of the septum.

In certain deflections where the redundancy is excessive a large V-shaped piece must be removed. This can be done without injury to the mucous membrane on the opposite side; this is highly essential so as not to disturb the blood supply and thereby prevent ulceration.

Originally in the majority of the cases I dissected up a flap of mucous membrane before making the V-shaped cut in the septum. This is not necessary in all cases. Neither could it be done where a number of cuts are necessitated. If, however, at the base of the septum it is necessary to remove a large V-shaped piece of the cartilage, a flap of mucous membrane should be dissected back before the removal of the cartilage. After the removal of the V-shaped piece the mucous membrane should be carefully molded back over the cut. It is not necessary to put in a suture, for if care be taken in inserting and placing the metal tube it will sufficiently support and hold this flap in place.

The only operation in any way similar to this, described in the various textbooks, is that of Ingals, of Chicago, in which he recommended for the correction of deformities of the anterior portion of the cartilage the removal of a triangular piece of cartilage after dissecting back a flap of mucous membrane. This membrane is replaced after the removal of the triangular piece of cartilage and retained in position by means of a suture.

In deformities of the septum, where the tissues have been forced down and the nose flattened, if it is desired to elevate the nose and place it in its normal position the V-shaped cut should not be used. The beveled edge cut, somewhat similar to the method used in lengthening shortened tendons, should be used instead. If, however, it is only desired to establish nasal respiration, the V-shaped cut should be used and sufficient tissue removed at different portions of the septum so as to allow of its being molded into line.

The question of redundant tissue is necessarily involved in this V-shaped operation. Whether or not it is called redundant tissue matters little. The principle involved in this method can be illustrated in a board which has warped. While the actual length of the board is only slightly altered, in order to place it back in line a series of saw cuts are necessary, the amount removed depending

on the curvature. This is exactly the principle of this V-shaped cut. If this method is properly applied it will remove redundancy either anteroposteriorly or perpendicularly.

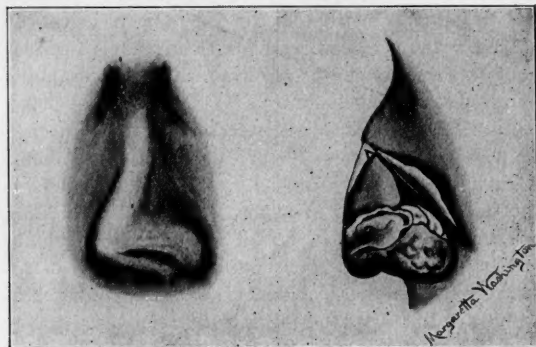
For the removal of this V-shaped piece I have always used a small curved saw described in a previous article on this operation. In some cases, however, the making of the cut and removal of the V-shaped piece was very tedious and unless great care is exercised by the operator he will not remove a sufficiently large V-shaped piece of tissue to break up the resiliency of the septum. One case in particular in which I had great difficulty in removing the V-shaped piece suggested the advantage of an instrument which would make the cut and remove the tissue at the same time. Dr. George Fetterolf, who has assisted me in a number of septal operations and this one in particular, afterward devised the V-shaped file saw, as described in *American Medicine*, March 1, 1902. This is a most Admirable instrument for the removal of this V-shaped piece. The instrument can be made at any angle desired so that a large or small piece may be removed. It simplifies and shortens the operation very much.

While in nearly all cases it is necessary to make more than one incision it is rarely ever necessary to make more than two V-shaped cuts. The other incisions in the septum should be made with the thin saw merely to lessen the resiliency of the septum and permit of its being freely flexible and easily molded into shape. The length of the cut in the septum antero-posteriorly will depend entirely upon the extent of the deflection. This is also true of the width of the V-shaped piece to be removed.

The advantage of the saw cut in controlling the line of fracture when the bony septum is involved cannot be overestimated. The removal of the V-shaped piece of bone with a saw was a more difficult process than the removal of the piece of cartilage. The file saw is of special advantage in those cases in which the bony septum is involved. A sufficient number of incisions should be made and sufficient tissue removed by the V-shaped cut to allow the septum to be placed in the line and supported there by means of the nasal tube. There should be no pressure whatever from this tube, as it acts merely as a support and is not intended for pressure. Should swelling occur, however, after operation and the tension be too great, the advantage of this metal tube is that its diameter can be lessened by the introduction of a pair of forceps and the compressing of the tube. I have used these tubes for the past

six years and find them perfectly satisfactory in every way. They can be molded to fit any nostril either at the time of operation or afterward. This is a great advantage over the hard rubber tubes. The tube may be left in position as long as the septum needs support. I have allowed the tube to remain in position from three days to six weeks without any bad results. If there is any irritation produced by the tube, the nostril should be sprayed night and morning with camphorated albolin, one grain of camphor to the ounce of albolin.

If the V-shaped cuts as well as the straight cuts are made at the proper point and of sufficient length and width there will be little need for using the septum forceps for breaking up the resiliency. However, the small septal forceps of Roe or the small roll forceps as described in my book on page 257 may be used in breaking up



No. 4.

No. 5.

No. 5 should show the V-shaped cut extending down on the septum.

any remaining resiliency and to make the septum perfectly pliable.

The Sinexon dilator is of great advantage in cases in which the obstruction is such as to occlude the nasal cavity and make it difficult to insert the cutting instrument. The dilator should be set so as to limit the amount of pressure and passed through the obstructed side, using sufficient pressure to force the septum over far enough to allow of the free insertion of the cutting instrument.

The after-treatment is very simple. Unless there is evidence of infection I think it is better not to use any spray or douche. If, however, the inflammation is rather severe, cold should be used during the first eight hours; if necessary afterward heat should be

applied externally and a warm spray or douche of boric acid solution, eight grains to the ounce, should be used in the nostril.

Fig. 4 shows deflection of the septum with external deformity, and I wish to call attention to a very simple method of correcting this deformity. Figs. 4 and 5 need very little explanation. First a small oblique incision (see Fig. 4) is made through the skin into the nasal cavity on the convex side of the deflection just at the point of junction of the cartilage and bone, through which the small saw or file saw is then inserted and a V-shaped portion of cartilage removed. This should extend down on the septum (further than is shown in Fig. 5) a sufficient distance to break up all resiliency, and the amount removed should be sufficient to render the cartilaginous portion of the nose entirely pliable. The external wound is then closed by one suture, as it is not necessary to make an incision over $\frac{1}{8}$ to $\frac{1}{4}$ inch in length. It is then sealed with collodion over cotton.

The internal deformity is corrected the same as given above where no external deformity exists. It is of importance that a sufficiently large V-shaped piece be removed in order to render the septum perfectly pliable, in other words, to remove all redundancy. The principle involved in correcting the external deformity is identically the same as for the correction of the internal deflection of the septum. The prime object in all septal operations is to remove redundancy and break up resiliency. General anesthesia is preferable, although the operation can be done under local anesthesia.

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CORRECTION:—In the July, 1902, issue of the *LARYNGOSCOPE*, page 506, we published a superscription "*Empyema of the Antrum*," by C. M. COBB, M.D., Boston, Mass. This should be FREDERIC C. COBB, M.D., Boston, Mass.

RUBBER SPLINTS IN THE TREATMENT OF SEPTAL CURVATURE.*

BY J. PRICE BROWN, M.D., TORONTO.

Three years ago I had the honor of reading a paper before another American society on the use of rubber splints in the treatment following intra-nasal operations. Since that time I have had occasion to use them in many instances in which operative treatment was required; and now desire to lay before the Fellows of this Association, in a brief paper, the result of that experience: confining my remarks, however, to their use in cases in which septal curvature was the principal evil to be dealt with.

While vomeric ridges and exostoses may extend all the way back to the posterior nares, curvatures are usually confined to the anterior two-thirds of the septum; and a majority of these principally to the triangular cartilage. It is in the treatment of the latter class of cases that the rubber splint is particularly suitable.

In the formation of septal curvature there are several points which are of great practical interest. In a large majority of instances, particularly when occurring in adult life, the curvature of the cartilage is accompanied by thickening, which develops chiefly on the convex side, and in the neighborhood of the so-called septal tubercle. While this thickening is simply physiological on the straight septum, it becomes pathological on the curved septum, owing to the hypertrophic enlargement of the glandular tissue, occasioned by the rounding or stretching which the curvature gives to the mucous membrane. In these cases, while the tubercle on the concave side will shrink away into less than normal development, the tubercle on the convex side, lying in the region of the union of the vomer, with the perpendicular plate of the ethmoid, will enlarge sufficiently to interfere with normal breathing; and together with the general curvature of the whole triangular cartilage almost occlude the passage. Projecting backwards from the tubercle along the union of the supra-vomerine cartilage with the vomer, the hypertrophy may continue forming, in old cases, the

*Read at the Annual Meeting of the American Laryngological Association, Boston, May 26, 1902.

long osseous ridge so often met with. On the other hand, anterior to and below the tubercle, along the line of union of Jacobson's cartilage with the anterior end of the vomer a similar hypertrophic ridge may form, complicating and making larger the general curve.

Upon the etiology of septal deviations I will not enter, except to offer a mild protest against the idea, that the method of handling the olfactory organ has nothing to do with either the cause or increase of the deformity. It cannot be the chief cause; but I believe from my own professional experience, that in many cases of septal curvature, the habit of wiping the nose toward the concave from the convex side—which is habitual in all these cases—has a serious effect in aggravating the deformity.

If a dentist in a young adult can attach a chain to a tooth, which is blocked behind the adjoining ones for want of space, and by constant traction, in the course of a few weeks, draw the two apart, and pull the laggard one into line, it is reasonable to believe that the oft-repeated twigging of the nose in the one direction will have a serious effect upon the softer cartilage. These curved noses are always weeping; and pulling them many thousands of times each year to the one side, acts upon the principle of bending a green stick. The more frequently you apply the pressure, the more curved will the bow become.

My own experience differs also from some clinicians, who claim that when the bony septum is curved to one side the triangular cartilage is usually curved to the other. The rule I have found to be the opposite. It is possible when the chief deflection is that of the vomer, that the septal cartilage may curve the other way; but when the main deformity is of the cartilage, any septal ridge extending backwards has been almost invariably on the same side, as though the whole septum had formed a bow-like protrusion into one or other nasal cavity.

Sometimes these deformities are confined entirely to the cartilaginous region, the concavity on the one side being book-notched in form, and ending abruptly at the commencement of the bony septum—the convex side being rounded and hypertrophied in the region of the tubercle. In the treatment of such cases as these are the rubber splints especially useful; and it is to Mr. Lake that we owe the suggestion. He does not, however, mention the nature of the cases in which its use is advisable, nor the operation to which it serves as an adjunct. Still the shape of the splint and its advantages are spoken of by him in these words:

"Rubber sheeting should be kept in three thicknesses, one-eighth, two-eighths, and three eighths. The exact shape and size varies with each case. It may be either straight or boomerang, the latter enabling one to get pressure higher up the septum. If the thickest sheeting be used, the edges should have a long bevel given them by cutting with a sharp wet knife. These splints cannot become septic any more than can vulcanite; while they exert an elastic pressure which is less apt to cause sloughing and is surprisingly effective."

The class of cases in which I have personally found them most useful is the one that is the title of this paper; but the splint is rarely inserted without previously incising the cartilage. The usual method of procedure is the following:

The nasal passages are first sprayed with a one per cent solution of cocaine. This shrinks the tissues and renders the passages more open, enabling the operator to more thoroughly cleanse them. To accomplish the latter I prefer using an albolene or glycolene spray under pressure, as less likely to produce abrasion of the mucous membrane than are the alkaline solutions when similarly used.

A five to ten per cent solution of cocaine is then applied on a cotton holder to the septal cartilage on both sides, chiefly the convex one. Also a solution of adrenalin, 1 to 5,000. Local anaesthesia being induced the hypertrophied tubercle is removed if present, by knife or saw. Then a tenotomy knife is passed from behind forward in one or two straight lines over the convex surface and through the cartilage—the lines being a short distance apart and parallel to each other. These incisions are usually made on the bevel, enabling the cut edges to glide over each other. The finger is next passed into the nostril, and the cut septum pressed with little difficulty toward the median line. A splint is now chosen that after insertion will produce slight pressure upon both inferior turbinated and septum when straightened. I like to have a fairly tight fit, with a splint not too wide, so that the elastic pressure will keep it in position. There should be room enough above the splint to pass a light cotton holder armed with a small pledget as far as its posterior end; and the inferior meatus sufficiently free to allow a similar cleansing right through to the pharynx. After insertion, as a rule, the splint should not be removed at all until healing and solidity have been accomplished, whether this takes two weeks or four or even longer. Still for some time the patient should be under the daily observation of the surgeon, and the nasal passage regularly cleansed by the use of the cotton holder dipped

in a weak solution of cocaine or mentholated albolene or other medicament, as the exigencies of the case might require.

For a day or two there might be a slight rise of temperature and some pain; but these would soon pass away; and after a week or so I have always been able to allow the patient to go to his home, usually at a distance, with instructions to keep me informed of the progress of the case, and to return for examination, etc., at a certain time.

The advisability of moderate tightness on the part of the splint is instanced in several ways. First, by its elasticity it maintains its position giving immovable support to the septal cartilage during the process of healing. Second, It promotes absorption of the overlapping edges of the cut cartilage; for on removal if allowed to remain until healing takes place, the septum on the side operated upon will present a uniformly smooth surface.

I know that I run the risk of opposition to this method of treatment, on the ground that such prolonged retention of the splint might favor the occurrence of sepsis. This has not proved to be the case. As I said before, when fever occurs at all, it is due to irritation, arising almost immediately after operation and quickly subsiding. During the long process of wearing the splint there is no fever whatever, and no symptoms save those that arise from the occlusion caused by the presence of the instrument; and which is usually less than that previously experienced from the simple existence of the curvature.

The operation in regard to hands and instruments is done antiseptically. Within the nasal passage is placed a smooth compressible aseptic body, which, as stated by Lake, cannot become septic; and the nasal passage above and below this harmless body, being kept clearer of secretions than it was before the operation, it is difficult to believe that the retention of the instrument during the process of healing can be productive of evil.

As illustrative of these facts, I will briefly quote the history of the following cases: fif

Case 1. A boy aged 6 years, was brought to the outdoor clinic of the Western Hospital for treatment on account of entire inability to breathe through the right nostril. The occlusion had been increasing for several years and was occasioned, the mother thought, by a fall on the face which flattened the nose somewhat when he was two years old. There was a marked curvature of the cartilaginous septum to the right with a longitudinal ridge at its base. Un-

der chloroform the ridge was excised. Then an incision made over the centre of the convex curvature from behind forward, the course of the knife being guarded by the little finger in the left nostril. Notwithstanding this the knife accidentally penetrated the mucous membrane into the left nasal cavity. Hemorrhage was free; but a one-eighth splint long enough to extend beyond the triangular cartilage was at once pressed into the nostril. Bleeding ceased as soon as the splint was in place; and after the first hour or two there was no suffering. Nothing whatever was done afterwards, except to wipe away any discharge that might exude. The splint was removed two weeks later, revealing a perfectly healed, smooth, straight septum. After cleaning the splint it was replaced and worn another week; when it was taken out and the little patient discharged cured.

Case 2.—A carpenter aged 28, had his nose broken when a child by a fall, partially depressing the bridge. For years he had suffered from almost complete stenosis on left side. Examination. Right nasal cavity enlarged, presenting concave book-notched septum on that side. On left, large curvature with thickened tubercle and ridge along Jacobson's cartilage, filling the passage. After cocaine-ization an osseous ridge was discovered on same side, extending to near the posterior choana; while in the centre a bony synechia connected inferior turbinated with septum.

The first operation was to excise a portion of the enlarged tubercle, and Jacobson's ridge, and put in a rubber splint. Four days later the synechia and osseous ridge were sawn out; and after hemorrhage had subsided, a long rubber splint extending to the posterior naris was inserted. This was left in for a week. Then taken out daily, and after being cleansed, returned. The excisions in this case were extensive, although there was no linear cut into the septal cartilage. In six weeks the healing was very satisfactory resulting in a clear chink from end to end of the passage with reformation of mucous membrane.

Case 3.—A boy, aged 7 years, was brought to the hospital as a mouth breather, for treatment. He had been stunned by a blow on the forehead when four years old, since which time his mother reported, nasal breathing gradually became more difficult and finally ceased. There was curvature of cartilage to left with ridge at base. Columnar cartilage curved to right. Adenoids in nasopharynx. Under chloroform this ridge was excised. Then two bevelled incisions from behind forward were made through the car-

tilage on the curved side, the finger being placed in the right nostril to act as guide and protect mucous membrane from perforation. A two-eighths splint was at once inserted, pressing the cartilage into the medial line. While still under the anaesthetic a slip was taken from the columnar cartilage on the right side and adneoids removed. Two weeks later the rubber splint was taken out; the result being free nasal respiration and a good left nasal passage.

Case 4.—Boy, aged 17. Nose externally twisted to right. Said that he was struck by a ball on the nose two years ago, since which time nasal stenosis and deformity had occurred. Examination revealed extensive ridge formation on left side, with curve filling up the fossa, the tubercle part of the cartilage being adherent to the middle turbinated. Under cocaine I excised front part of ridge and the tubercle synechia; and after compressing septum to right with a chisel, I inserted a one-eighth inch rubber splint. Four days later, under chloroform, I made two incisions from behind forward through the septal cartilage, guiding as in other cases by the finger to the medial line, and a two-eighth rubber splint inserted. This was left in two weeks. The front part of the passage being now freely open, a bony ridge extending along the lower part of the vomer backwards was removed by saws; and to favor the formation of a smooth and even surface a long and wide one-eighth splint was placed in position. This created no discomfort. As the patient was returning home to a distant village he was instructed to leave it in without removal for a month. He wrote later that he had followed the directions, taking it out at the time stated; with the result of a better shaped nose and better breathing on both sides.

Case 5.—Divinity Student, age 26, October, 1900. Has had increasing nasal stenosis on left side for years, amounting to complete occlusion at time of examination, and destroying the tone and quality of the voice. There was a deep book-notch with wide passage on right side. On left curvature and general hypertrophy sufficient to completely fill the passage. One part of the cartilage from exposure to the dry air of respiration had become denuded of epithelium. The cartilage seemed to be very hard and resistant to pressure.

Under local anaesthesia from cocaine the case was operated on as in the others mentioned; but I could not press the septum to the medial line successfully, and only inserted a one-eighth splint. Ten days later chloroform was administered at the hospital and a cen-

tral cut made through the cartilage on the concave side along the floor of the notch. Relying on the previous cuts as well, the septum was then more successfully pressed toward the mesial line and a two-eighth splint put in.

The patient was kept in bed for several days. There was during this period some pain, and a rise of temperature of one or two degrees. But these symptoms gradually abated. The splint was worn continuously for two weeks, and becoming loose, was removed. As I was going South for the winter, a splint was not inserted again—simpler treatment for the time being resorted to.

In May, 1901, he returned to the hospital for treatment, a good deal of stenosis on the same side having recurred. Under chloroform I sawed out a ridge bone behind the curvature; and then made two horizontal cuts from behind forward on the concave side. Then with a spatula slipped over the curvature I forced the septum partially over, following this by the use of Delstanche's instrument. This time I put in a long and wide two-eighths splint. The pain following the operation was very slight, and the fever practically nil. Several weeks later the splint was removed, and as the patient felt well, and was going on a summer missionary tour to the North I made and inserted a splint that would give adequate support, and not be likely to become displaced. He went away on the 26th of June, and returned on the 19th of September, a period of twelve weeks, without ever having it removed. It had occasioned no discomfort. He had breathed somewhat through that side, and had found no difficulty in using his voice. On removing the splint the passage was free and the mucous membrane healed.

Case 6.—Boy, age 13. Mouth breather, snores and restless while sleeping. This, too, was an extensive curvature to the left with spur-ridge along Jacobson's cartilage. Deep saucer-like concavity on right side. After chloroform anaesthesia, a solution of adrenalin was applied, and the ridge removed with a knife. Then three incisions from back to front were made over the convexity, and a good sized one-eighth splint was used. There was neither pain nor rise of temperature. Three days later, under cocaine, the splint was removed, and a two-eighths one put in its place. The boy felt very well, and two days later, contrary to orders, took a long ride on his bicycle in the bent-over position. This caused a severe epistaxis from the other nostril, one of the incisions having perforated the septum. There was no bleeding from the plugged side. Tampons had to be inserted; but the splint was not removed.

In another week I allowed the boy to return to his home forty miles away, still carrying it. I heard from his father from time to time, but as the lad was attending school and free from all symptoms, he did not come back to the city to have it removed until four months after insertion. The result is that he has a free open passage, and has lost all his old naso-pharyngeal symptoms.

Case 7.—Lady, age 60, with curvature of septum to right; no anterior spur, but bony ridge along base of vomer. In this case, under cocaine and adrenalin, I treated the curvature first. The septum was hard. So instead of knife, incisions over the rounded surface, I made two saw incisions about half an inch apart; and then two knife incisions on the concave or left side. With Delstanche's instrument the septum was then pressed over to the mesial line, and a two-eighths splint put in. Two days later this was removed, the parts cocaineized, and a three-eighths inserted in its place. This was worn for three weeks. The septum seemed consolidated, the ridge was sawn out, and another splint worn for a few weeks longer. I then showed the case to the hospital staff, the contracted nasal passage having been restored to a normal condition and appearing the same size as the other.

In closing I would remark that these splints can readily be made by the surgeon. The only tools required being a sharp knife, a pair of scissors, a file and a piece of sand paper. They are, as already remarked, smooth and pliable, and thoroughly aseptic; while their compressibility renders them superior to any other material of which nasal splints can be made. I may say also, that the edges should always be rounded, and while it would not be wise to put them in too tightly, care should be taken to have the instrument thick enough to keep its position, without resting for support on the floor of the inferior meatus.

While I advocate the wearing of the splint uninterruptedly as long as its services are required, I insist again on the necessity for oversight of the patient by the surgeon for the first few days, and subsequently keeping in touch with him until the splint is finally removed.

PARAFFIN INJECTIONS FOR NASAL AND OTHER FACIAL DEFORMITIES, WITH EXHIBITION OF A NEW INSTRUMENT.

BY FRANCIS J. QUINLAN, M.D., NEW YORK.

Professor of Diseases of the Nose and Throat, New York Polyclinic; Otologist and Laryngologist to St. Vincent's and (N. Y.) City Hospitals, etc.

Historical.—The credit for the introduction of paraffin injections for prosthetic purposes appears to belong clearly to Gersuny, who, in reporting his first cases in 1900, states that he had been conversant with the method for a number of years. But the idea of injecting solidifying oils for purposes other than prosthesis is considerably older than Gersuny and the credit for first carrying out the principle appears to belong entirely to Dr. Corning of New York, who injected solidifying oils for the relief of pain as far back as the eighties. We have not space here to cite the numerous ways in which Corning made this principle valid in combating pain, and must refer those who are interested in the subject to an editorial in the Medical Record for February 1st, 1902. The early work of Gersuny and his successors was directed entirely to prosthesis, and only after this use of paraffin had become well-established did it become apparent that the principle contained the possibility of a wider range of usefulness; and we find that Gersuny* has recently recommended his paraffin injections to prevent the reunion of nerve segments after neurectomy—just as Corning had done many years ago in the attempt to cure occipital neuralgia.

But the subject of prosthesis is in itself so important and far-reaching that we are justified in shelving any other uses of paraffin injections in this connection; and since Gersuny first published his experience in this field, the method has become widely known and endorsed on all sides. As all new therapeutic resources have to run a gauntlet of hostile criticism, it need not surprise us that paraffin prosthesis has been antagonized on various grounds. It

*Gersuny's Method (Moskowitz in *Wein. Klin. Woch.*, No. 25, 1901).

Technique: Gersuny used vaseline, known officially as "ungt. paraffini." This substance is known to the profession as "white vaselin for medical purposes." Its melting point is 36° - 40° C. - 97° - 104° F. At room-temperature this substance has the consistency of an ointment. It is sterilized by boiling, taken into the syringe and allowed to cool. When completely cool it is injected in the form of a fine thread.

has been claimed that the substances injected may exhibit toxic properties, that they may excite a serious local reaction and, finally, that they may induce paraffin embolism of the lungs.

Gersuny claimed originally that there is absolutely no inflammatory reaction following the injections; but in his later writings he conceded that there is a slight, albeit harmless, reaction. It is as well to admit that, whether from defects of antiseptic technique, or from causes less thoroughly understood, abscesses may form and sloughing may occur, and it is even related that "symptoms of tetanus" followed an injection of paraffin (Robinson). But accidents of this sort must be extremely infrequent, for the great majority of reported cases are devoid of any complications of this sort. In regard to chemical intoxication from absorption of paraffin or its derivatives, this is now conceded to be impossible with a chemically pure substance. Cases of alleged intoxication have indeed been reported, but they can be explained only upon the supposition of impure injecting substance.

The subject of paraffin embolism of the lungs has been made light of in this connection. This accident has occurred a number of times in connection with the injection of vaselized calomel for syphilis. The two conditions are hardly similar, for in the anti-syphilitic treatment, the oil is not intended to become solid. Nevertheless pulmonary embolism is possible with Gersuny's original method of injection, as witness a case of Pfannenstiel's in which the former's directions were closely followed. But paraffin embolism of the lungs, however alarming the symptoms, is really a benign affection; and Gersuny now claims that by injecting the paraffin in a solid form, such an accident is impossible. Bearing all that has been said in mind it must be admitted that the injection of paraffin is a thoroughly benign procedure which has no more complications than any other form of minor surgical intervention.

Clinical.—Following Gersuny, many observers have used paraffin to fill up congenital gaps, as well as to overcome deformities resulting from cicatrices following loss of tissue; but in no part of the body has its use been more forcibly demonstrated than for the correction of congenital, traumatic and specific affections of the external nose.

The different contributions that have been voiced from various parts of the medical world, and the claims made by clinicians, have amply demonstrated that this adjunct to our present working arma-

mentarium has come to stay; and, although as yet enjoying a probationary existence, the results so far ratify its value and enhance its weight by the testimony of operators in this special field of medicine. Gersuny little dreamed, when he filled that scrotal pouch with vaseline, that this material would be injected into the many accessible cavities, and that untold benefit would result from its introduction. Surgeons have forced other preparations of paraffin into hollow cheeks, into the bladder, the rectum, and even the breast of the female has not escaped its invasion, and it has been recommended to contract the inguinal ring in hernia, and for the prevention of vaginal prolapse.

The various depressions attended by facial deformities that are daily met with in our clinics have been improved by this unique remedy. The external structure of the nostril has received its share of attention, and deformities that could only be overcome by mechanical supports of celluloid, tin, silver, gold, etc., are to-day treated by the paraffin method of injection with excellent results.

Haskin has recently demonstrated its utility in filling bony depressions following mastoid operations.

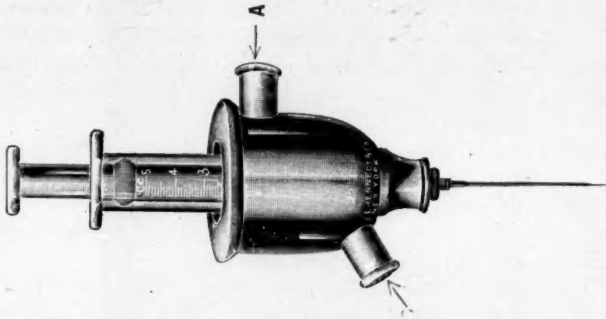
Harmon Smith exhibited at the Academy of Medicine, within a short time, a number of interesting cases which bore their weight of testimony, and reference may be made to the results of Stein in Bergmann's clinic, who cites a case of typical saddle nose cured by this subcutaneous injection.

Heath's recent article in "American Medicine" amply strengthens the many foregoing contributions. He offers in evidence the case of a man, aged 32 years, with entire absence of cartilaginous septum. One and one-half drams of paraffin at a temperature of 37° R. was injected between the eye-brows, and carried subcutaneously to the point of depression. The report of this method shows excellent results.

The technique hitherto employed has been attended by so much annoyance from the coagulation of the wax, due to the small opening of the needles found at present in the market and the peculiar temperature incident to the solidification of this agent; and it was therefore with much difficulty and considerable trouble that this material could be forced into the cavities. Many have abandoned the method on account of the disappointment due to its faulty manipulation.

A few words regarding the mechanism of the instrument sub-

mitted to the society may not be out of place here. An ordinary glass antitoxin syringe with a needle of a large calibre is used. This is encased in a metallic hood or jacket through which flows water at a temperature of from 118° to 125° F. This hood is fed from a receptacle holding not less than one to two quarts of water of the temperature named, which is placed on an elevation of from one to two feet above the operator. From this vessel a small rubber tube is attached to the hood, thereby allowing the operator to throw the fluid into the distal point of any cavity desired. The instrument presented is one of simplicity, the glass syringe being preferred to the metal one, in order that thorough cleanliness may be maintained, and the contents of the barrel viewed at all times. Asepsis is one of the most important elements in the manipulation of this remedy. Paraffin must be carefully sterilized.



The above cut represents the coil or barrel around Syringe. A is point of entrance of hot water, and B its exit through tubing. This instrument was made for me by J. E. Kennedy & Co., New York City.

The skin, for some distance about the point of puncture, should be thoroughly cleansed with a strong antiseptic solution, in order to render sterile the field of operation. Care must be taken that too much fluid is not forced into the cavity, as it is better to make subsequent injections than to render tense the structure by overfilling. Some attention must be given to the cellular tissue above the nasal bridge and on the sides of the nostrils, as abscesses may result, and in one instance even destruction of the lachrymal duct has been noted. After injecting the fluid, the operator can mould the substance to any desired shape or form by external manipulation. It is customary to spray the site with an iced antiseptic solution, and to seal the puncture with aseptic collodium, although

this is not always necessary. Some observers have thought that this fluid is absorbed, but as connective tissue replaces it, and maintains the desired form, it matters but little, so long as the deformity is corrected. The substance encapsulated, in a short time assumes almost a bony hardness, without exerting undue pressure upon the surrounding tissues.

The deductions from this method of medication seem to warrant a fair and further trial in a number of selected cases, and hence the argument for its use in many deformities on and about the face. The writer wishes to place before the Section his contribution to this method of medication, and reviews his work at the various clinics where he has given it a fair and honest trial. The results obtained seem to justify the continuance of this excellent and reliable agent. In thirty-two cases where this method was employed by the writer, but two unfavorable results followed. The first in a man of advanced years, with marked syphilitic destruction of the bony and cartilaginous septum, as well as almost collapse of the external framework; the second, in a chronic alcoholic, who developed a slight cellulitis afterwards.

In reviewing the work along the line indicated, the writer is satisfied that a new avenue has been opened up for the rhinologist in correcting marked deformities with but little risk.

The requirements for this operation are absolute asepsis and careful introduction of this fluid into the cavity.

It is now nearly 18 months since the author made his first injection for nasal deformity, and to-day, after due reflection, with the reinforcement of this new equipment, he feels that the novice and the expert can equally distribute this fluid where it is needed, with perfect safety to the operator, and to the delight and satisfaction of the patient. The field of paraffin prosthesis is limited only by the confines of surgery itself, and it is mere supererogation to detail the possibilities of the method. Wherever there is a defect of either hard or soft tissues, congenital or acquired, the injection of paraffin may render service, whether for a mere anatomical (cosmetic) or physiological end.

One point may be mentioned under the head of technique. It does not appear to be understood by the followers of Gersuny that the latter now injects his paraffin in the solid form. He allows the melted substance to cool in the syringe and forces it into the tissues in the form of a fine thread. In this way the possibility of paraffin embolism of the lungs is avoided.

THE LOCAL APPLICATION OF HEROIN HYDROCHLORIDE.

BY PROFESSOR ALBERT ROSENBERG, OF BERLIN.

The inquiries frequently made of me as to the local action of heroin hydrochloride in the larynx since my first report (*Die Heilkunde*, May, 1901), and the objections brought out against its topical use, have induced me to revert to these questions. With regard to the latter point any hesitation as to its local application may be dismissed if the quantity used does not exceed the dose prescribed internally, and this, as a rule, is not necessary.

I employed in my first experiments a watery solution of 1 to 20, 0.1 cm. of which contained 0.005 heroin, corresponding to the customary dose. In order not to exceed this limit I injected the solution with a laryngeal syringe containing 1.0 cm. and graduated accurately after the manner of the Pravatz syringe. The shaft of the piston has a scale up to 10, and is provided with a movable ring, so that after the syringe has been filled a slight turn of the piston rod from 1 to 2 will force out of the curved cannula just 0.1 cm. and no more, the regulator preventing any further advance of the piston rod. Inasmuch as the injected quantity, however, is sometimes insufficient to spray the desired area, I have lately reduced the concentration of the heroin to one-half, that is a solution of 1 to 40, so that of this 0.2 cm. can be injected without any risk. The effect was essentially the same as with the previously employed solution, so that I would advise now the use of the weaker solution.

The effect of the local application of heroin in the larynx is two-fold; first, cough allaying, and second, analgesic. Heroin owes its recognition as a remedy against irritating and dry coughs to its influence in reducing both the central and peripheral irritability. This effect is naturally manifested by its local application, since it is as readily absorbed by the larynx or trachea as by the stomach. Aside from this there is another factor. We know that in cases of laryngeal tuberculosis, which are generally accompanied by severe attacks of cough, this symptom is not infrequently produced by the morbid changes in the larynx, especially the marked

granulating ulcerations. The granulations which are floated up and down during inspiration and expiration cause so violent a desire to cough that even a well disciplined patient is unable to suppress it. The assertion frequently made that the cough of patients with laryngeal tuberculosis always originates in the lungs, is not correct. I have been frequently able to convince myself that in these cases the troublesome tussal paroxysms can be rapidly removed, or at least considerably diminished in intensity, by anesthetizing the diseased area by means of such a drug as menthol. Similar conditions apply to the posterior laryngeal wall, which is so frequently the site of tuberculous disease, and which is the most sensitive cough locality in the larynx, although not the only one. If, therefore, we are in a position to allay the cough or remove it for a certain time by means of a local anesthetic or a drug, which will at least reduce the sensibility which is commonly increased in these cases, we do the patient a great service, especially those lamentable cases of laryngeal tuberculosis which are often greatly weakened in consequence of the tussal paroxysms and disturbance of the night rest.

The application of heroin to the mucous membrane reduces its sensibility, as we have found by numerous experiments. If we let a few drops of the solution flow from a drop bottle upon a cotton pledget and apply this to the mucous membrane of the nose, pharynx or larynx, in doing which often not one-half of the fluid is used up, we are able by touching the parts with a sound before and after the application, to demonstrate a diminution of the sensibility. Hence heroin is also of service locally in coughs in certain cases entirely apart from its internal effect.

In all patients suffering with laryngeal tuberculosis we have often been able to note a considerable diminution, and even an almost complete cessation of the cough for a number of hours up to twelve or even the entire night, as for example in the following case.

O. K., painter, 24 years old; tuberculosis of both pulmonary apices; slight infiltration of the posterior laryngeal wall; complains particularly of violent cough which not infrequently is associated with vomiting. January 3rd, at midday, 0.005 gm. heroin was injected over the posterior laryngeal wall. January 4, almost no cough until the following morning, the same conditions prevailing during the further use of the remedy, although not always to the same extent. The effect, however, was always more marked than after the internal use of the same dose.

Far more beneficial is its analgesic action, which chiefly determined us to employ it in the dysphagias which so often unfortunately accompany laryngeal tuberculosis. It is true that there are quite a number of drugs which have the same effect, such as morphine, cocaine, antipyrine, and menthol. On the other hand, the first two are best avoided, at least for continued use, owing to their injurious general effect, while the two latter produce an intense

burning before the development of the analgesia. Antipyrine, moreover, has an undesirable action upon the heart. I would not have it inferred, of course, that these remedies should not maintain their well-deserved place in the laryngological armamentarium. I would be the last to depreciate menthol, which I introduced into laryngo-therapy. It is very agreeable, however, to have at our disposal a large selection of remedies which are capable of removing the pains in swallowing of patients suffering with tuberculosis of the larynx, since one or another may fail in any given case. Hence I believe that heroin is deserving of some consideration in this condition, although I would add that it does not exert any special influence upon the tuberculous process.

Sch. C., 48 years old, tuberculosis at both apices; large fissured ulcer over the right false vocal cord. The patient complains of violent cough and lancinating pains in the throat, especially on swallowing. November 26, 1900, heroin hydrochloride 0.005 gm. was injected, which was followed by freedom from pains after two hours, with subsidence of the cough. In the night there was a feeling of fullness in the throat. Further injections made November 29 and 30 had the same effect. After the last injection there was again a feeling of entire painlessness and almost entire disappearance of the cough.

A. Z., 25 years old; hereditary phthisis; infiltration at the right apex; tuberculous infiltration of both ary-epiglottic folds. The patient complained that there was cough with vomiting and pains on swallowing. For several weeks heroin hydrochloride injections were made almost daily in the larynx, with the result that the pains at first ceased for several hours and later for the entire day. During the entire course of treatment she remained free from them. The cough was also relieved.

B., 35 years of age; tuberculosis of the lungs and larynx; tuberculous infiltration of the epiglottis and ary-epiglottic folds. After heroin hydrochloride injections made daily the cough was less marked, while the effect on the pains was similar to that following menthol injections.

In all our patients with laryngeal tuberculosis suffering with dysphagia, we obtained a satisfactory effect as regards the latter. This effect, just as I have observed with menthol, seems to be cumulative, the pains disappearing at first only for a few hours, and later remaining absent the entire day. Some of the patients stated that they also had a feeling of stricture or of a lump in the throat, which, however, was not annoying.

In order to obtain the full action it is, of course, necessary to deposit the fluid upon the site of the disease, and not to be satisfied with having merely injected the larynx. There will, of course, be some cases in which heroin, like all other medicaments, will not afford the results described above, but as I have already said, it is an advantage to have one more efficient remedy to meet these indications.

SOCIETY PROCEEDINGS.

EIGHTH ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Held in Washington, D. C., June 2, 3 and 4, 1902.

CHARLES W. RICHARDSON, M.D., of Washington, D. C., Pres.

The meeting was held in the Cosmos Club, and was opened by an Address of Welcome by Dr. George M. Sternberg, Surgeon-General of the United States Army. He welcomed the Society to Washington as a centre of scientific work, and to the Cosmos Club, of which he is the President, as the centre of scientific work in the city. He said that he was glad that physicians in Washington were recognized, as they should be, as true men of science.

President's Address.

Dr. Charles W. Richardson, of Washington, D. C., delivered this address. He dwelt upon the university and scientific life of Washington, and the congenial surroundings for scientists. Touching upon the methods of teaching the specialties in medical schools, the opinion was expressed that the plan of compelling instruction in the special as well as in the other branches had led to undue crowding of the curriculum, and had been disappointing in its results. The instruction in the specialties, he thought, should be so planned as to supplement rather than to supplant the major branches, of which they form an integral part. Attempts to turn out full-fledged specialists should be promptly checked. Theoretically, the elective system was ideal, yet the tendency in the undergraduate life was toward too great narrowing by the elective system, and he thought in the long run the elective student would be overtaken and passed by those who had received a broader education. In the opinion of the speaker it was best to develop the specialist by post-graduate teaching founded upon a broad general education in medicine.

Speaking of the condition of the Society, the President said that there were now 233 names on the roll, and that the Section meetings had been better attended than in former years. A new depart-

ure has been made this year in the conduct of the annual meeting by establishing a pathological exhibit.

Aural Bougies.

Dr. George L. Richards, of Fall River, Mass., said that a few years ago he had spoken about the use of aural bougies for the relief of earache and otitis externa. He now desired to exhibit these bougies, which he had had made. They could be done up in tin foil or dispensed in lycopodium powder. After dipping in warm water they are inserted in the external auditory canal. They are composed of morphine, stropine, cocaine, carbolic acid and gelatino-glycerine. The following is the formula which is a modification of those introduced by Gruber: Carbolic acid 1-16 minim; fluid extract of opium, 1-7 minim; cocaine, 1-4 grain; atropine sulh., 1-14 grain; enough water, gelatin and glycerine to make a proper mass which will readily dissolve at the body temperature. These bougies are the size of a quill and half an inch long. In his experience, earache had been aborted by this means in considerably more than one-half of the cases occurring in children.

Exfoliation of External Auditory Meatus.

Dr. M. D. Ledermann, of New York, presented several specimens. The first was a specimen showing exfoliation of the external auditory meatus, occurring in a long standing suppurating case. On removing a polypoid formation this mass has been found lying loose in the canal. After the pus removed the discharge stopped in a comparatively short time.

A Large Fibro-myxoma.

The second specimen was a large fibromyxoma which could not be removed by the snare, but required evulsion. Suppuration ceased after the removal of the growth without any secondary applications. The growth was attached to the attic, and though a large perforation of the drum existed, it healed over under antiseptic treatment.

Foreign Body Removed with Difficulty.

The third specimen was a foreign body (a pebble) for the removal of which several unsuccessful attempts had been made by others. By taking off the auricle the body was removed, and the auricle was then sutured back in place. The pebble could not be seen through the external canal, as the inner third of the canal

was filled with granulated tissue which surrounded the foreign body. The probe detected a hard substance through the granulation tissue. Attempts were made to remove the stone through the canal, but the pebble had formed a cavity from which it could not be dislodged. After displacing the auricle and removing the granulation tissue the stone was extracted with a dull wire curette. A large perforation in the posterior-inferior quadrant existed together with a dislocated malleus, which was also removed under antiseptic treatment, healing of the membrane resulting in four weeks, with good healing.

Points of Necessary Prominence in the Treatment of Catarrhal Deafness.

Dr. Sargent F. Snow, of Syracuse, N. Y., read this paper. He believed that in chronic cases a good prognosis was warranted in many more cases than it is now given. The secret of success was often to be found in the relief of a constitutional condition by which the Eustachian tube is kept occluded. The best treatment was the introduction of air under pressure, saturated with gum camphor and iodine, through the Eustachian tube into the middle ear, but such treatment was out of the question until patency of this tube had been secured. The modern tendency to coddling and improper personal hygiene were serious obstacles to the successful treatment of these cases. Wool and linen mesh were the best materials for the undergarments. The living rooms should be well ventilated, and cold baths should be taken regularly. In a few cases in which such baths seem impracticable or undesirable, a partial substitute would be found in brisk, dry rubbing of the skin with a harsh towel. The functional activity of the liver must be maintained.

Dr. C. R. Holmes, of Cincinnati, said that he only disagreed with the author on the question of underwear. Personal experience had showed him that woollen underwear was not the best for the catarrhal subject. Most persons lived in over-heated rooms. They could not remove heavy undergarments, without trouble or possible danger while it was very easy to regulate the protection of the body by using light underwear and varying the weight of the outer clothing. He had many times taken persons, both old and young, out of flannel underwear in mid-winter without any serious inconvenience. During the past year he had adopted the plan of printing rules and detailed instructions for regulating

the living of these patients. If the patient would not in this way help the physician the local treatment would avail very little.

Dr. C. Dunbar Roy, of Atlanta, Ga., said that no fixed rules could be laid down which would be applicable to individual cases. He believed that woolen underwear should not be worn in the winter, the changes being made in the outer clothing. The nose was often operated upon when it could not relieve the condition of the ear. Because our nostril was stenosed was no reason for believing that the deafness would be relieved after the removal of the nasal obstruction. He preferred the use of a solution of menthol and iodine in albolene to the use of vapor in the Eustachian tube. He always made use of a solid silver catheter bent each time to adapt it to the naso-pharynx of the individual case. The condition of the drum membrane as to its pliability and the existence of adhesions should be ascertained before making a prognosis. In lithemic subjects, and in those nervous persons in whom there was a determination of blood to the head on slight excitement, special treatment was required.

Dr. S. MacCuen Smith, of Philadelphia, thought it was a mistake to put on heavy woolen underwear in winter, even in places as far north as Philadelphia. The general hygienic treatment outlined by the author was very useful. It had been his habit to make use of a hot shower or *douche*. There should be placed over the bath tub a frame made of gas pipe, and extending around the entire periphery of the bath tub at the height of six or eight feet. In this way a solid stream of hot water presses the full length of the spinal column. Hot water and cold water are used in quick alteration. By this means the person becomes less susceptible to changes in temperature. Physicians were generally inclined to overlook the value of respiration through the skin. He had not the slightest doubt that auto-intoxication arising from fecal accumulation was often a complication in these cases, and hence, he believed in flushing the colon every day for a few days, and then once a week. From two to four quarts should be used for each flushing.

Dr. Max A. Goldstein, of St. Louis, said that from the trend of the discussion so far it would appear that we were now on the eve of finding a method of curing the great bugbear, chronic catarrhal otitis media, yet he was still of the opinion that that much-to-be-desired goal is still a long way off. The hygienic treatment has been well outlined in the paper, but would not be found suffi-

cient in many cases, and often after years of faithful and well directed treatment the discontinuance of the treatment would be quickly followed by relapse.

Dr. George L. Richards said that he admired Dr. Snow's enthusiasm and wished that some of his cases with chronic catarrhal deafness were so situated that they could be placed in Dr. Snow's hands. Chronic catarrhal otitis media could exist with the nose and pharynx in perfectly normal condition. One great difficulty was that these patients did not seek relief until quite late. Professor Minot had recently announced that he had discovered glands in the Eustachian tubes, a point which might explain some of the intricacies of this subject.

Dr. E. B. Dench, of New York, agreed with Dr. Holmes as to the advisability of changing the outer clothing rather than the weight of the underwear. It had always seemed to him that silk was the worst fabric for underwear because it quickly became saturated with moisture, and the wearer was therefore exceedingly liable to be chilled upon the slightest exposure to cold. The linen mesh underwear was found very comfortable and useful by many catarrhal subjects. He believed that these cases of chronic catarrhal deafness could be very materially benefited. These patients should be told at the outset that cure was probably out of the question, and that improvement could only be effected by a long course of treatment. Discouraging as were these cases, his experience had been that, in persons who would intelligently co-operate with the physician, the results were encouraging, and even in the worst cases the deafness would increase exceedingly slowly.

Dr. William L. Ballenger, of Chicago, said that he had been almost carried away with the eloquence and logic of the reader of the paper, and while the treatment must, for the most part, be that outlined in the paper, he could not entirely share Dr. Snow's enthusiasm or endorse his favorable prognosis. The reasons for failure were obvious from a study of the pathology. The disease was one in which the mucosa had been hypertrophied, and adhesive bands extended to the drum membrane or the ossicles. Moreover, the pathological conditions in the Eustachian tube complicated the case. This tube contains considerable lymphoid tissue, which by hypertrophy, often caused obstruction. Under such conditions hygienic treatment could not be expected to effect a cure.

Dr. D. J. Gibb Wishart, of Toronto, Ont., remarked that the

reader of the paper had not insisted upon hygienic treatment alone, but only that it should be given its proper place.

Dr. John A. Thompson, of Cincinnati, said that the preventive treatment should receive consideration. The proper treatment of the nose and throat during the acute infectious diseases of childhood, and in typhoid fever and acute articular rheumatism, would accomplish much in this direction.

Dr. John O. McReynolds, of Dallas, Tex., endorsed what had been said by the previous speakers regarding underclothing, and heartily recommended the use of linen. The linen absorbs the moisture very much more rapidly than the other fabrics. The linen mesh had served him very well. It was exceedingly difficult in the South to induce ladies to take sufficient exercise because of the hot climate. About the only exercise they would indulge in was swimming.

Dr. Lewis A. Coffin, of New York, quoted a remark once made by Dr. D. E. St. John Roosa, in a discussion of this kind, i. e.: "Yes, gentlemen, they will all hear, but it will be when Gabriel blows his horn."

Dr. Snow said he agreed fully with those who had spoken regarding the use of thinner underwear in winter than was commonly worn. He had been wearing linen mesh for years, but in his cold climate he found a light woolen garment necessary for two or three of the winter months. With regard to the use of vapors, he wished to say that by injecting these interruptedly the mobility of the parts seemed to be increased by the manipulation. The auscultation tube should always be used in giving the treatments. Auto-intoxication appeared to have an important connection with many, but not all of these cases. The sclerosed cases certainly appeared hopeless, but there was a great many more which could be benefited by appropriate treatment. Even in the more intractable cases he was becoming more hopeful as a result of giving daily treatments instead of at longer intervals as formerly.

The Effect of Climate on Laryngeal Tuberculosis with Special Reference to High Altitudes.

Dr. Robert Levy, of Denver, Colo., read this paper.

This paper will be published in full in *THE LARYNGOSCOPE*.

Dr. Levy exhibited in connection with his paper an Antitubercle Screen and Laryngoscopic Chair.

DISCUSSION.

Dr. Arthur G. Root, of Albany, said that he believed tuberculosis was the greatest social problem confronting the human race to-day, and it required a united effort on the part of the profession to solve this vital question. He knew of no locality within the United States to which every case of tuberculosis should be referred, though he knew of a number of places in this country to which certain cases should be referred. Intelligent treatment of tuberculosis would be productive of better results than could be possibly attained by any climate alone. It was generally admitted that laryngeal tuberculosis might be primary in a few instances. A case of tuberculosis showing fairly advanced pulmonary lesions, and giving a history of repeated hemoptyses, should not be referred to a high altitude until this condition had improved. The dryness and purity of the air constituted the essential elements. It was safer for the person to gradually reach a high altitude so as to avoid excessive strain. Such climatic treatment combined with the other recognized methods would probably give the best results.

Dr. C. Dunbar Roy said he did not believe that tuberculosis was ever primary in the larynx. He knew of no treatment equal to a suitable climate. Altitude was not all. Dry air was the most important desideratum. Atlanta was situated at an elevation of 1,500 feet, but in that moist climate he had seen cases of tuberculosis get steadily worse, and only improve when sent out to the dry air of Arizona. By one, deep strong inhalation of a strong solution of menthol in albolene it was often possible to detect pulmonary tuberculosis in its incipency. A cooling sensation would be experienced in the lung not involved.

Dr. H. W. Loeb, of St. Louis, said that since hearing this paper he had changed his view of which he had previously held, i. e., that it was better for cases of laryngeal tuberculosis to die at home than in Colorado. He had known cases of tuberculosis which had received every kind of treatment at home without improvement, improve rapidly after going to Arizona and receiving no treatment.

Dr. John O. McReynolds said that about two years ago he had resolved not to treat any more cases of laryngeal tuberculosis because, no matter how faithfully he treated them at home, he found they did better in a more suitable climate without any treatment whatever. He had succeeded in getting the best results in an alti-

tude of about 3,000 feet on the plains of Western Texas. San Antonio had an excellent reputation as a health resort for tuberculosis patients, but recent statistics showed that so many such persons flocked there that the natives were contracting this disease. Experience showed that these patients did absolutely better when away from many other tuberculous patients and with only such treatment as they could carry out themselves.

Dr. G. L. Richards said that he met with many persons afflicted with laryngeal tuberculosis who could not leave home and must be treated to the best of our ability. He had already reported ten cases which were helped and several apparently cured by simple local treatment, such as the use of lactic acid and paramono-chlorophenol.

Dr. S. MacCuen Smith, of Philadelphia, said that in countries like Scotland, despite the moisture, the results seemed to be as good as in high and dry altitudes.

Dr. M. A. Goldstein, of St. Louis, said that he had many patients with incipient pulmonary and laryngeal tuberculosis to the western divide, and they had returned home with decided improvement in the laryngeal condition. He had treated three cases of laryngeal tuberculosis in St. Louis, occurring in residents of Denver, and despite the treatment they had become worse. They all improved after having been back in Denver for about six months.

Dr. Sargent F. Snow said that altitude seemed to act well in a few cases of the stimulation of the circulation and improvement in the general health. Like Dr. McReynolds he did not give his cases of laryngeal tuberculosis local treatment, but sent them to a moderate elevation, about two thousand feet, and if they did not do well there they were sent to a higher altitude. Many of his cases had done well in the Catskill and Adirondack mountains.

Dr. M. D. Ledermann commended the impartiality of the paper under discussion. He firmly believed that the high altitude treatment was very promising. It was doubtful if tuberculosis was every primary in the larynx. Out-door treatment was most important, and extensive medication was contraindicated.

Dr. Levy, in closing, said that, of course, no one climate was suitable for all cases. As a rule, the cases developing the diseases in Colorado were obliged to seek other climates for even temporary relief. The stage of the disease and the patient's financial condition must always be taken into consideration before sending them to some special region for climatic treatment.

The Constitutional Manifestations Due to Infectious Processes in the Adenoid Structure of Children.

By Dr. D. Braden Kyle, of Philadelphia.

This paper will be published in full in *THE LARYNGOSCOPE*.

DISCUSSION.

Dr. C. R. Holmes said that he had frequently met with these cases, and had found that they often suffered also from tubal catarrh. Sometimes the quantity of adenoid tissue had been so small that operation had not seemed necessary, yet on the removal of this small mass of tissue the tubal disorder had also disappeared.

Dr. Robert Levy said that, with the exception of West, he did not know of anyone who had directed attention to this important matter. A case was mentioned occurring in his own experience in which with only a moderate adenoid hypertrophy a fever of considerable duration was quickly controlled by washing out the nose, and a cure effected by removal of this adenoid tissue.

Dr. D. J. G. Wishart said that the infoldings of this gland were so deep that the absorbing surface was made very great, and the subject was worthy of considerable attention.

Dr. J. A. Stucky, of Lexington, Ky., said that until a year or two ago he had been inclined to look upon the cases described in the paper as being dependent upon irritation of the alimentary canal rather than of trouble in the naso-pharynx. Very frequently the patient was relieved by a mercurial purge, but he had met more recently with a number of recurrent cases, and the removal of a small mass of adenoid hypertrophy had effectually prevented further attacks.

Dr. L. A. Coffin, of New York, referred to a case in which a child was thought to be suffering from malaria, but the usual anti-malarial remedies failing to give relief, the naso-pharynx was examined and pus discovered, apparently coming from the ethmoidal region. Adenoids had been previously removed from this child's naso-pharynx. He was inclined to think that retention of pus at various points explained these cases.

Dr. W. E. Shields, of St. Louis, reported an illustrative case.

Dr. Dunbar Roy insisted upon the use of the post-nasal mirror rather than the finger in the examination of the naso-pharynx. Reference was made to a case in which the naso-pharynx was occluded by a whitish membrane, causing great obstruction to breathing, but associated with no rise of temperature. Two cultures for the Klebs-Loeffler were negative.

Dr. C. G. Coakley, of New York, was of the opinion that inspection with the mirror often gave a very faulty idea of the amount of lymphoid tissue present when the latter was situated low down.

Dr. H. W. Loeb, of St. Louis, said that he had opposed to the removal of adenoids unless they occluded the tube or interfered with nasal respiration. He had had under observation a child with attacks of otitis media recurring at intervals of a few weeks. There was a very small mass of adenoids, but since its removal there had been no more of these attacks.

Dr. C. E. Munger, of Waterbury, Conn., said that he had been called to see a case of diphtheria because of the great difficulty in breathing. He had removed at once a very large mass of necrosed adenoids, with the result that there had been a quick amelioration of the symptoms. This was the only time that he had operated during an attack of diphtheria.

Dr. Kyle, in closing, said that he often made an examination for adenoids with a nasal speculum and a small electric lamp in the mouth. Only about once in a hundred and fifty times could a satisfactory examination be made in a child by means of the rhinoscopic mirror. He often made use of the finger, and could determine adenoid hypertrophy with it when this was impossible to either of the other methods.

Report of a Case of Rapid Necrosis of the Temporal Bone Following Scarlet Fever.

Dr. Francis R. Packard, of Philadelphia, was the author of this paper. The subject of the report was a child who had been in good health and had no disease of the ear prior to an attack of diphtheria followed by scarlet fever. Examination then showed a large sequestrum of bone plugging the external auditory canal. Streptococci and staphylococci were found in both ears, though in only one was there any extensive necrosis.

A Case of Fibro-Papilloma of the Larynx with Unusual Movements.

Dr. H. W. Loeb, of St. Louis, reported this case. A woman of thirty-eight years was the subject of the report. The history dated back to an attack of suffocation and dyspnea coming on during the night. Her voice was jerky, but there was nothing about the breathing to indicate laryngeal obstruction. Examination of the larynx showed apparently a tumor on the posterior wall of the infra glottic portion of the larynx and trachea. As expiration began the tumor appeared, swung around and passed into the supra-

glottic portion; then a second tumor appeared and surmounted the first tumor, almost completely hiding the glottis from view. During phonation, as a rule, only the first tumor succeeded in getting above the glottis. Three tumors were first removed by the forceps and a fourth one at a later sitting. It was evident that the tumors had sprung from the inferior surface of the right vocal band, and that their mobility was due to the length of the pedicle.

Dr. George L. Richards said regarding the removal of intralaryngeal tumors under local anesthesia that if one-quarter of a grain of morphine were given about half an hour before the operation, it would greatly aid the operator as the natural reflexes would be much less marked as a result and the local anesthesia intensified.

Spasmodic Torticollis Following Adenotomy.

Dr. John M. Ingersoll, of Cleveland, O., presented this communication. He said that spasmodic torticollis following any operation was very rare. He had only found the record of one case occurring after adenotomy, and that had been reported by Dr. J. F. McKernon. His own case occurred in a well nourished boy. The adenoid tissue was removed under cocaine anesthesia with a Gottstein curette. Two days later the boy returned with a typical torticollis. Three hours after the operation the boy had begun to complain of pain in the throat, and the face turned to the left. Examination showed no apparent injury to the surrounding structures. The disorder was looked upon as a neurosis, and he was treated by suggestion and massage. The torticollis was easily overcome, and did not recur. The speaker was of the opinion that recover would have taken place, though perhaps more slowly, without any treatment. Two cases of torticollis had been cured by Dr. A. J. Gillete by adenotomy.

Dr. Thomas H. Halsted, of Syracuse, said that he had met with an exactly similar case in which the torticollis had entirely disappeared after nine days without any treatment.

Dr. William R. Lincoln, of Cleveland, O., recalled a case, occurring in a young girl, upon which he had operated for adenoids. The next day the muscles of the soft palate were found to be alternately relaxing and contracting, and inquiry elicited the fact that the child had suffered from chorea some time previously.

Influenza as a Causative Factor in Inflammatory Diseases of the Respiratory Tract.

Dr. W. B. Shields, of St. Louis, read this paper. In his experience the sinuses most frequently involved were the frontal and ethmoidal and the affection was sometimes associated with impairment of memory and lethargy. All cases of frontal sinusitis recover without operative interference unless there is pre-existing polypoid hypertrophy or inflammation of the sinuses. The sphenoidal sinus was often affected, but recovery was usually spontaneous. The worst cases were those in which the ethmoidal cells were affected. The laryngitis of influenza was similar to that found in ordinary colds. The most distressing and dangerous cases were those in which influenza attacks the lungs, and this was particularly so in persons showing arteriosclerosis or chronic disease of the lungs. The tendency to tuberculous infection after influenza was well marked.

Dr. J. A. Stucky said that he had met with very few cases of influenza which had affected the larynx or the lower portions of the respiratory tract. He had noticed that violent frontal and occipital headache were out of all proportion to the constitutional disturbance. The nose would show perhaps only a slight swelling of the turbinate, and the temperature of the body was apt to be subnormal in the morning and rise to 100° or 101° F. later in the day. Small hemorrhagic spots were frequently found in the drum membrane of the ear. In three cases he had observed loss of smell and of memory following influenza. The majority of these cases could be relieved without surgical interference unless there had previously existed a polypoid degeneration or some other abnormal condition. Because of the prostrating effect of the disease the patient should be put to bed at once. The salicylates combined with the bromides had given him the best results in the constitutional treatment. He avoided the use of opium and of the coal-tar products. To relieve the pain he used dry heat or a very weak saline solution of adrenalin, one to eight or twelve thousand. The mistake was often made of using too strong a solution, thus causing excessive reaction. The pain was due to retention of secretion.

Dr. Shields objected to the use of adrenalin in any disease of the frontal sinuses in which there was acute inflammation. He preferred a weak solution of cocaine or of eucaine.

Various Operative Procedures for the Relief of Chronic Suppurative Otitis Media, and their Comparative Value.

Dr. Edward B. Dench, of New York, read a paper upon this subject. In a consideration of the topic, he confined his remarks to those cases of long standing, in which suppuration had persisted in spite of the ordinary measures for relief. In all cases the cause of the otorrhea was diseased bone within the tympanic cavity. In order to effect a permanent cure it was necessary that all diseased foci should be removed, and that any wound resulting from the surgical interference should be made to heal as quickly as possible in order that all regions previously diseased might be quickly covered with normal epithelium. In cases where the caries was confined either to the ossicles or to the ossicles and those parts of the tympanic cavity which were easily accessible through the external auditory meatus, excision of the ossicles and thorough curettement of the tympanic cavity through the external auditory canal constituted the ideal procedure, both on account of its simplicity and its safety. The author showed both from his own statistics and those of other operators that the simple operation of removal of the ossicles and thorough curettement of the tympanum, effected a cure in at least one-half of the cases operated upon and he advised this procedure, provided the cases submitted to the operation were carefully selected. In every case in which this operation was undertaken the author emphasized the necessity of a thorough and complete search for the incus. The reason for this was that this ossicle was most frequently the initial seat of the intra-tympanic caries, and even though only a small fragment of the ossicle remained, this would be sufficient to keep up the suppuration. It should be remembered that the incus usually lies close to the margin of the tympanic ring. Occasionally it may be displaced into the lower part of the tympanic cavity by the operator in extracting the malleus. The speaker drew attention to the fact that while many operators considered the operation as finished with the removal of the ossicles, it was important to bear in mind that the operation was not complete until all diseased bone had been removed from the tympanum by the thorough use of the curette. Hemorrhage could usually be controlled by packing with sterile gauze strips or with gauze strips saturated in a sterile solution either of adrenalin chloride or of suprarenal extract. When there was extensive caries of the middle ear it was necessary to thor-

oroughly expose the tympanum and the adjacent cells by the free removal of the osseous walls. When the mastoid cells were also involved, the mastoid antrum was entered as the initial step of the procedure and the author advised this as the first step in practically every case in which the radical operation was indicated. His custom was to make the incision through the soft parts, 5-16th to 1-2 inch behind the line of the posterior auricular fold. The anterior flap was then dissected forward and the posterior margin of the bony meatus exposed. The author found that if he dissected out the fibro-cartilaginous meatus from the bony canal that this membranous tume would rupture posteriorly close to the level of the drum membrane. He favored entering the mastoid antrum through the external auditory canal, as the initial procedure. The operator was next advised to follow the upper wall of the external meatus inward and remove the floor of the tympanic vault, thus throwing the tympanic vault and the antrium into one large cavity. The next step was to break down the bridge between the opening already made in the mastoid and the external auditory meatus. This procedure involved the removal of the posterior wall of the external auditory meatus. This should be done freely, the bridge being taken away completely down to the floor of the external auditory canal, as far inward as two-thirds the length of the canal, that is the outer two-thirds of the posterior wall of the meatus should be removed completely and made continuous with the mastoid opening. It was considered unsafe to remove the posterior wall of the canal to this extent throughout its entire depth for fear of injuring either the facial nerve or the horizontal semicircular canal. If the bone was removed according to the plan already described the horizontal semicircular canal and the aquaeductus Falloppii, lying just below it could be easily seen by the operator and all diseased bone remaining could be removed without injury to these structures. Where the mastoid cells were pneumatic, these were to be thoroughly explored until firm bone was reached. Hemorrhage sometimes constituted an obstacle to the operation, but could always be controlled by firmly packing the cavity with gauze. In some instances, the operation was prolonged on account of persistent oozing from the bony structures, but in no case was hemorrhage so severe as to prevent the completion of the operation. The middle ear and mastoid having been thoroughly cleared out, it was next necessary to provide an epithelial lining for the extensive

bony cavity thus formed. Such a cutaneous lining was obtained by forming flaps from the posterior wall of the fibro-cartilaginous meatus and from the concha. The exact form of flap to be employed must vary with each individual case. The writer had found that in most cases it was wise not to limit these flaps to the fibro-cartilaginous meatus, but to take some tissue from the concha as well in order to secure a larger amount of cutaneous covering for the exposed bone. He had also found that it was of material advantage, in most cases, to dissect out the fibro-cartilaginous tissue from these flaps, so that the integument might be applied more perfectly to the bony walls of the cavity. There was danger in this operation of injuring the facial nerve, the horizontal semi-circular canal, the labyrinth and the lateral sinus. Any of these accidents could usually be avoided by care on the part of the operator. Comparing the results of these two operations upon the function of the organ, the writer stated that the surgeon could generally promise that the hearing would probably not be worse after the simpler operation of removal of the ossicles, but would, in the majority of cases, be improved. The effect of the radical operation upon the hearing was somewhat uncertain. In many cases it remained the same as before the operation, in a few it was made worse, and in others the hearing was improved. It was, therefore, wise prior to the performance of the radical operation, to caution the patient that the function of audition might be greatly impaired as the result of the operative procedure.

Chronic Suppurative Otitis Media. When Should Radical Surgery be Employed in Its Treatment, and of What Should This Consist?

Dr. George L. Richards, of Fall River, Mass., presented this paper.

This paper will be published in full in the September issue of THE LARYNGOSCOPE.

DISCUSSION.

Dr. S. MacCuen Smith, of Philadelphia, advocated the early recognition and treatment of acute suppurative disease of the ear in order to prevent many of these cases from becoming chronic. A very large percentage of these cases could be cured if proper treatment were early instituted. Early incision of the membrana tympani could do no harm, and would often arrest the process before suppuration had begun. His experience had been that in a rather large percentage of cases in which the tympanic operation

had been done, the radical operation would be subsequently demanded. He preferred the Stackle-Schwarze operation because of the diminished danger to important contiguous structures. The lateral sinus was certainly more forward in these chronic cases, as pointed out in Dr. Richards' paper. The effect on the hearing was of slight and secondary importance.

Dr. R. C. Holmes reported another case of facial paralysis coming on after ossiculectomy and curetting of the upper and posterior wall. Complete paralysis developed on the seventh day and disappeared in about two weeks. He had never been in favor of the Stacke operation because of the liability of wounding important structures. A study of a great many temporal bones and taking plenty of time in operating would minimize these dangers. He had frequently exposed the dura and the lateral sinus, and did not think there was any danger in so doing. He preferred to open up and see what he was doing so as to effect a permanent cure. He believed that there should be 100 per cent of cures after one or more radical operations, barring intracranial complications. He was satisfied that Dr. Dench's method of using the incus hook was better than that taught him by Schwarze, and he had proved by actual experiment that by the latter method there was danger of dislocating the incus into the antrum. He preferred to do the plain Schwarze-Stacke operation, and the actual time of operation with him varied from twenty minutes to an hour and a half. If one cut freely into the cartilage one was likely to have perichondritis result with consequent shrinkage of the ear. In the majority of cases he left the wound open at first, allowing it to close in the second or third week. In young persons it could sometimes be closed at once. In the vast majority of cases the hearing had been better or not injured. Chronic suppuration even of a low grade was unquestionably deleterious to the general health, as was shown by a slight rise of temperature and a sallow complexion. The mouth of the tube should be most thoroughly, almost severely curetted. According to his experience the after-treatment was very important, and it seemed impossible to drain the average hospital interne in a short time to dress these wounds properly.

Dr. James F. McCaw, of Watertown, N. Y., asked what was the experience of the members with ossiculectomy as to the formation of a new tympanic membrane, and what had been the effect on audition. This question was prompted by personal experience.

Subsequent to this new membrane formation, improvement in hearing had been afforded by the use of the Valsalva method. Immediately after the operation the hearing had been enormously augmented. The formation of the tympanic membrane had required about two years.

Dr. M. D. Ledermann, of New York, said that he thought all would agree that the radical operation would be the future treatment of chronic suppurative otitis media, but the dangers must be taken into consideration. At the last meeting of the society he had reported a case in which there had been a malposition of the lateral sinus. In using the chisel heroically one was apt to make too rapid progress. Where there was mastoid involvement there was danger of sinus thrombosis from the opening of a sinus previously healthy. He knew of three such cases; hence the necessity for the cautious removal of the diseased tissue around the sinus. He recalled a case in which reformation of the drum took place in four weeks, the case being one of long standing-suppuration. At that time the patient complained of pain and, fearing retention of secretion, the membrane was removed and also some granulation tissue found in the attic. This caused severe vertigo and vomiting, which necessitated the patient's remaining in the office for two hours. One of his cases had been compelled to stay in bed for two weeks because of severe vertigo and projectile vomiting. He would again insist upon the great importance of thoroughly curetting the tympanic orifice of the Eustachian tube.

Dr. Robert Levy asked what was the average length of time the discharge lasted after the two flap methods described; also in those instances in which the posterior wound was allowed to remain open for three or four weeks, what was the after-treatment of this portion.

Dr. Dench said that the drum membrane sometimes re-formed, and it seemed often to make the hearing worse. He did not think the special flap method required had any effect on the time the discharge lasted; he ordinarily expected this time to be from six weeks to two months.

A Naso-Pharyngeal Tumor.

Dr. G. Hudson Makuen, of Philadelphia, reported this case and exhibited the patient. He was a youth of eighteen, having a tumor attached to the posterior third of the left nostril and to the vault of the pharynx. Both nostrils were practically occluded. The tu-

mor filled the vault of the pharynx. A small section of the growth had been examined by Dr. David Riesman, who reported it to be an edematous fibromatous growth characterized by stratified epithelium. On July 7, 1901, under ether, a portion of the growth had been removed with a snare and No. 0 wire. The tumor was very vascular and the operation was followed by considerable hemorrhage. This specimen was examined by Dr. W. M. L. Coplin and thought to be granulomatous. Nothing had been done since that time, and the patient had become apathetic in regard to it. There had not been much change in the case except the appearance of an infiltration of the muscles of the cheek. Antisyphilitic remedies had been employed without effect.

Dr. H. W. Loeb said he did not place over-much reliance on the diagnosis by the microscope of this class of cases. He would suggest that in this particular case electrolysis be used. He had seen marked improvement in three such cases, not only in a reduction of the vascularity, but in the size of the growth, and others had reported good results. One of his cases had been kept under observation about ten years. He did not like the infiltration in the cheek, because in one of his cases that proved to be malignant had acted in a similar manner; the mass proved to be an extension of the growth around the posterior surface of the superior maxilla. In one case, thought to be a fibrosarcoma with elastic fibres, the tumor grew from the vicinity of the Eustachian tube. The course of the case did not point to its being a sarcoma.

Dr. Ewing W. Day, of Pittsburg, said that he had unfortunately met with a number of such cases. One of them was a very extensive fibroma. The patient would not consent to removal of the superior maxilla, so he had made the incision as for that operation except not going under the eye. He had then cut into the maxillary antrum and cut away the inner wall of the antrum, leaving the nostril attached to the outer border of the bone. When the antrum and the nasal cavity were thus thrown into one cavity, he was able to reach the root of the growth, and remove it without producing much hemorrhage. He had been surprised at the wide field of operation thus obtained. This operation had been done three years ago, and there had been no recurrence. If he had to do the operation again he would leave only a ridge to anchor the nose to, and so prevent the ballooning that now takes place in this patient when blowing the nose.

Dr. J. A. Stucky said he believed that if this infiltration of the nose were left untreated it would require an external operation. From his own experience he felt that it was not possible to make a snare that would remove the tumor from MaKuen's patient. Mention was made of an exceedingly trying case of the kind that had fallen to his own lot.

Dr. J. O. McReynolds, Dallas, Tex., advised using a cold wire snare, and holding it in position while an assistant tightened the snare as much as possible. Having made a pedicle in this way, the galvanocautery loop should be thrown around the growth. This method would allow some of these growths to be removed that would ordinarily break snare after snare. A case was cited in which the superficial layers of the growth indicated only fibroma, but examination of the deeper ones showed sarcomatous elements.

Dr. M. D. Ledermann, of New York, said that he had some experience with Dr. Dawbarn's method of operating in order to starve out these growths in the rhinopharynx, and he would suggest that Dr. Makuen consider this method in connection with his case. A case was referred to in which the patient had been seen five years after the Dawbarn operation and there had been at that time no return of the growth.

Dr. Edward B. Dench remarked that Dawbarn's method embraced ligation of the external carotids and their branches, with complete excision of the ligated vessels.

Dr. G. H. Makuen said that it had been impossible to get the cold wire snare around the tumor because it extended so far down on the posterior pharyngeal wall. The patient and his family would probably not consent to any other radical operation.

(To be Continued.)

LARYNGOLOGICAL SOCIETY OF LONDON.

Seventy-fourth Ordinary Meeting, May 2nd, 1902.

E. Cresswell Baber, M.B., President, in the Chair.

The following report of the Morbid Growths Committee was read:

On Dr. H. Pegler's case of cystic growth of the septum (vide "Proceedings" for April, 1902, p. 103).

After examination of the specimen and sections submitted, the Committee report as follows:

1. The cyst was evidently of old standing, there being displacement and atrophy of the septum nasi and middle turbinate.
2. The wall of the cyst is composed of the fibrous layer of the periosteum covered with mucous membrane normal to the parts.
3. There is insufficient evidence on which to speak definitely as to the nature of the lining membrane of the cyst. If it was endothelial, no cells now remain.
4. There is no evidence of any embryonic tissue, e. g. nevoid.
5. Meningoceles have generally been seen in the middle line, and usually connected with other congenital deformities.
6. The Committee suggest the possibility of a cyst arising in a dilated lymph space of the nasal periosteum, which, perhaps, had a communication with the subarachnoid lymph space.

The following cases, specimens and sections were shown:

Sections of a Large Recurrent Papilloma, which seemed to Grow from the Left Maxillary Antrum.

Shown by Dr. Bronner. The patient, a woman aet. 40, had had left nasal obstruction for over one year, and for five or six weeks had noticed a purulent and offensive discharge from the left nostril. A large grey mass completely blocked the nostril. This was removed by the snare. A fortnight later there was recurrence. The nostril was scraped, and a large smooth cavity could be felt with the finger, corresponding in position to the antrum, but much larger in size. There had been slight recurrence of the growth,

which was removed by the snare. There was now very little discharge, and it was no longer offensive, and there had never been much pain or external swelling or hemorrhage. The symptoms at first seemed to point to epithelioma, but microscopical examination showed the growth to be papilloma. The fact that there had never been much hemorrhage, or pain, or external swelling, and that the growth had practically disappeared, also seemed to point to papilloma, from a clinical point of view.

Specimen of Sarcoma of Right Tonsil.

Shown by Dr. Walker Dowie. The patient, a woman aet. 58, when first seen, complained of a swelling of the right tonsil, which had been slowly increasing in size since the beginning of that year. It had come on without any apparent cause, and at first gave her only slight discomfort. During the next three months the affected tonsil slowly increased in size, and the patient lost flesh and strength.

She consulted another doctor, who proposed to excise the affected tonsil, but on her return two weeks later to have this done the tonsil was found to have increased so much in size in that interval that he had deferred operation. She could swallow with comparative ease. On examination through the mouth, a tumor occupying the position of the right tonsil was seen, somewhat resembling an hypertrophied tonsil. It was barely the size of an average walnut; it had the form of an enlarged tonsil, and was of a deep red color, with several greyish patches of superficial erosion distributed over its surface. It was firm to the touch, non-fluctuant, and palpation caused no pain. The faucial pillars were not adherent to the tumor, which was, as a consequence, freely moveable, and the lymphatics in the neighborhood were unaffected.

She was admitted to the infirmary with the least possible delay, and on August 23rd the tumor was removed under chloroform, through the widely opened mouth, and the growth was enucleated by the finger-nail and scissors. Firm pressure over the raw surface checked what bleeding there was.

Swelling and ecchymosis of the faucial pillars on the right side followed the operation, but this rapidly subsided, and the patient was dismissed on September 2nd with the parts completely healed.

On microscopic examination the tumor was seen to be a spindle-celled sarcoma. Towards the surface of the tonsil, however, there was a layer of well-formed connective tissue, covered by the epithe-

lial investment of the tonsil. This latter (not complete in the sections) presented no evidence of invasion by the growth. The tumor, however, in other parts has reached the surface. A spindle-celled sarcoma might, as is known, remain encapsulated for a considerable period, and the glands remain unaffected, and if recognized and enucleated whilst still encapsulated, there was every hope that the operation would effect a cure. Such being the conditions in the present case, this result was hoped for. The patient was not seen again till October, 1901, two years and two months after operation.

On examining the mouth, a small, smooth, rounded projection about the size of the tip of the little finger was seen springing from the soft palate at a level of the upper border of the right anterior pillar, and close to it. On palpation this projection and the surrounding parts of the palate and fauces were found to be the seat of an infiltration—hard, nodular, and firmly fixed.

Externally there was a fullness just behind the angle of the right lower jaw. On palpation this was found to be hard and fixed, and to nearly fill the space between the angle of the lower jaw and the tip of the mastoid process.

The woman's health was still fairly good; she was stout and florid, and the local manifestations had increased but slowly, the only additional complaint being that of pain and throbbing in the right ear, aggravated by lying down.

Specimen of a Fibrous Growth Removed from the Naso-Pharynx of a Boy aged 14.

Shown by Dr. Walker Downie. The patient, who was first seen on February 21st, 1901, had complete obstruction of the right naris for many months, and latterly the left naris had been similarly affected.

The naso-pharynx was very completely occupied by a large bluish-grey growth, the lower portion of which, rounded and smooth on the surface, projected below the level of the free border of the soft palate for fully half an inch during respiration, and during deep inspiration a much larger portion of the growth was exposed to view. This growth was removed by means of a cold wire snare introduced through the mouth. Its removal, though carried out slowly, and by torsion rather than by cutting, was followed by a very profuse hemorrhage.

On microscopic examination the tumor was found to be a richly

vascular and very edematous fibroma, consisting of a dense reticulum of curling fibres, and comparatively few cellular elements.

The operation was followed by continued improvement in the boy's health, and, so far, there has been no recurrence.

Specimen of a Fibrous Growth Removed from the Naso-Pharynx of a Boy aged 11.

Shown by Dr. Walker Downie. The patient had had difficulty in breathing through the nose for years, and for at least eighteen months he had snored loudly while asleep.

The naso-pharynx was occupied by a large fleshy growth which bled readily on manipulation.

By digital examination, under chloroform, the growth was found to spring from the vault of the pharynx. Its extirpation was attempted by means of a chain ecraseur passed through the nose, but this instrument broke while crushing through the firm fibrous pedicle. It was latterly removed by torsion, while firmly grasped by a curved wire rope ecraseur. Twelve months later the left superior maxilla began to swell, and the left naris became obstructed. The left upper jaw, which was then found to be the seat of a sarcoma, was excised, and the result has been subsequent immunity.

Microscopic examination showed this tumor to be a dense fibroma, in which, however, the cellular elements were comparatively numerous.

Specimen of Sarcoma of the Fauces.

Shown by Dr. Walker Downie. The specimen consisted of the soft palate, fauces, pharynx, larynx and gullet. The patient, a man aet. 33, had been first seen on February 26th, 1901. He then complained of sore throat, pain on deglutition, and huskiness of some three months' duration. On examination, the fauces were seen to be in a state of deep congestion, and the left faucial pillars and the greater part of the buccal pharynx ulcerated.

Chromic acid solution was applied to the raw surfaces, and mercury with iodide of potassium was prescribed. He improved very greatly up till the end of June, when, without any apparent cause, his cervical glands became enlarged, and he again experienced difficulty in swallowing.

On August 17th, 1901, he was admitted to hospital, and the local lesion was found to have extended very considerably, both in area and in depth. Not only were the left faucial pillars and the

buccal pharynx ulcerated, as when first seen, but the whole nasopharyngeal cavity was raw, and the ulceration had extended down to the opening of the gullet. At the lowest part of the pharynx the mucosa was undermined, and a pocket with gaping mouth was found on the left side, into which food entered, and, to further complicate matters, the posterior wall of the larynx—the arytenoids, and interarytenoid membrane—was greatly swollen. He was, as a consequence, quite unable to swallow any food (in attempting to swallow food it returned through his nose), and a bougie could not be passed into the gullet. It was therefore necessary to resort to rectal feeding, which was maintained till death. The odor of the discharge secreted by and covering the raw surfaces was not only foul, but loathsome.

On September 20th he was pale, cachectic, and exhausted, as much from septic absorption as from insufficient food.

On admission to hospital the cervical glands on the right side formed a swelling considerably larger than a duck's egg, and this swelling slowly increased in size till four days prior to death, when it very rapidly shrank, and at death was scarcely perceptible.

The man was married. His wife had had no miscarriages, and he was the father of a healthy child of seven months. Up till about twelve months ago he had enjoyed good health, with the exception of frequent attacks of sore throat, which, from his description, appear to have been of the nature of simple acute tonsillitis.

The results of the post-mortem examination were wholly unexpected. The extensive ulceration of the palate, fauces and pharynx, accompanied by swelling which resembled inflammatory edema, might well have passed for a syphilitic lesion. But on proceeding further new growths were found in the lungs, the liver, and the kidneys, in all of which the essential features presented were those of round-celled sarcoma.

Case of Laryngeal Stenosis in a Man aged 50, resulting from a Large Syphilitic Ulcer of Left Side of Larynx.

Shown by Dr. Donelan. Patient was shown at November and January meetings on a question of diagnosis, as there was some suspicion of malignant disease. The ulcer is almost healed, but the patient is shown now on account of the stenosis which appears to be increasing, and in evidence of the fact that even extensive syphilitic disease of the larynx may be successfully treated without any local measures.

Case of Syphilitic Contraction of Posterior Pillars of the Fauces in a Man aged 44.

Shown by Dr. Donelan. The patient was admitted to the Nations Hospital last September suffering from pneumonia and a large tertiary ulcer, involving the naso-pharynx, posterior aspect of vomer, and back wall of pharynx. During his subsequent mixed treatment as an out-patient contraction of the cicatrix gradually took place, and the posterior pillars were gradually drawn together until they are as might be seen now.

Complete Occlusion of Right Nasal Vestibule in a Man aged 32.

Shown by Dr. Herbert Tilley. The condition followed the insertion of a strong styptic which was applied to check severe bleeding during an attack of pneumonia. The cartilaginous portion of the septum deviated very markedly to the right, and it was thought probable that the occlusion was the result of cicatrization of the two closely apposed surfaces, the ulceration of which had been induced by the styptic.

Dr. Watson Williams thought it was an interesting point that this condition should have followed immediately upon an attack of acute pneumonia. The question of pneumococcal ulceration was so new, and so few cases were known of or described, that it was impossible for him to do more than throw out a suggestion that some of these cases of ulceration might be due to pneumococcal infection.

Advanced Destruction of Intra-Nasal Structures Associated with Suppuration of the Right Maxillary Sinus.

Shown by Dr. Herbert Tilley. The patient, a man aet. 42, had had syphilis six years ago, and the intra-nasal structures had been extensively destroyed. A portion of the vomer alone remained of the septum, and the right middle turbinal was absent.

The exhibitor wished for the opinion of the Society as to whether such a condition might not arise independently of syphilis, and as a result of septic infection of the nasal mucosa.

The President suggested that this might be a case of syphilis; it looked very much like it.

Dr. Pegler said that Dr. Bennett, who was unable to stay to the discussion, requested him to say that he did not see any parallelism between his case and Dr. Tilley's.

Case of Great Symmetrical Thickening of the Upper and Anterior Part of the Nasal Septum.

Shown by Dr. Lambert. The patient, a man aet. 33, had been under treatment for the past twelve years for nasal obstruction. This apparently depended upon a very marked thickening in the neighborhood of the tubercle of the septum. This thickening was so great that the case had been diagnosed as a cyst of the septum. It had been cut away and cauterized many times, but had always recurred after a few months or a year. Dr. Lack first saw him about a month ago, and with snare and cutting forceps removed the growth from one side, which is now clear, but the curious growth can still be seen on the other side. If this swelling was simply an exaggeration of the boggy thickening of the septum often seen in this region, it was by far the most marked example he had ever met.

The President asked whether there was any suppurative disease in the left maxillary sinus.

Dr. Hill thought that there was some suppuration present, but he imagined that that was not the point which Dr. Lack intended to emphasize in connection with the case; it was rather the recurrence of the large thickening of the septum after it had been freely cut off in large portions with, presumably, a knife.

He had almost come to the conclusion that there was a tendency in all soft thickenings of the septum to recurrence after removal, and sometimes even in hard structures also.

Dr. Pegler had had an almost exactly similar case under his care. He thought these cases were probably syphilitic in origin.

Sir Felix Semon was glad to hear he was not the only unfortunate person with regard to these cases. It had so often struck him after operations on the septum that the difficulty one had in subduing the subsequent swellings was very great, and literature afforded hardly any assistance as to the after-treatment of these cases.

Dr. Lack was surprised to hear there was often difficulty in preventing recurrence after operations for thickened septum. He had small experience in cases of this kind, but in bony thickenings of the septum he had found no recurrence after operation.

Case of Inherited Syphilis of Nose, Pharynx and Larynx, with Complete Occlusion of Anterior Nares.

Shown by Dr. Lambert Lack. The patient was a boy who had come under observation three weeks ago with complete occlusion of the left nostril and a red granulating ulcer of the right nostril, with nearly complete atresia of this side also. The soft palate was infiltrated with small nodular patches, and in places there was slight ulceration and scar tissue. The upper part of the larynx was similarly affected, the epiglottis being partially destroyed, and the stump greatly thickened and distorted. Under treatment with potassium iodide internally, and mercury ointment locally, the ulceration of the right nostril had healed, and there was now complete atresia of both anterior nares, with remarkable little sign of loss of tissue or of scarring.

Sir Felix Semon doubted from the appearance of the larynx whether this case was due to syphilis alone, though that disease might, in part, be the cause. He would think lupus a more probable explanation of the condition, and had no hesitation in saying that the appearance of the epiglottis was almost typical of lupus. Of course, the nose made the diagnosis doubtful, as did the result of the treatment. He thought some tissue ought to be removed and examined for tubercle bacilli.

He drew attention to the fact that whilst there was complete occlusion of the nose, there was no deafness.

Dr. Lack admitted that the condition of the palate and larynx strongly resembled lupus, but considered the favorable result of treatment pointed strongly to syphilis.

Case of Large Laryngeal Growth in a Woman.

Shown by Dr. T. W. Bond. Patient, a married woman, had had some huskiness of voice for thirteen months. She had had no cough, no difficulty or pain in swallowing, no night sweats, and temperature was normal. There was no history of syphilis. She had had one severe attack of stridor. There were no enlarged glands.

On right side of larynx there was a large red mass, firm to palpation, extending from below cord to level of tip of epiglottis. The right arytenoid and the ary-epiglottic fold were merged in the mass. The case was shown for the purposes of diagnosis.

Dr. Dundas Grant took the growth to be a sarcoma, and wished to know whether Dr. Bond had also come to this conclusion.

Dr. Lack said some members might remember a somewhat similar case he had shown to the Society in February (see vol. ix, p. 60). This patient had marked edematous infiltration of one side of the larynx, and especially of the arytenoid, and had been under observation for three months, and taking iodide of potassium. Quite lately, however, tubercle bacilli had appeared in the sputum, and Dr. Lack considered that the large majority of doubtful cases of this kind proved, ultimately, to be tuberculous. He thought this should be the diagnosis of Dr. Bond's case.

Mr. R. Lake thought the growth here looked as if it had been palpated, and he would like to know whether the redness was due to injury by a finger.

Dr. StClair Thomson said that this case reminded him of a case he had shown to the Society of a growth in a similar situation in a man about fifteen months ago. The patient was somewhat older than Dr. Bond's patient, being forty-five. It was, when shown, taken by the Society to be a malignant growth, the patient at the time being without any symptoms of tuberculosis. Some two or three weeks after showing him his health broke down, and tubercle bacilli were found. Tracheotomy had to be performed, and the man died of tuberculosis. He thought he had previously mentioned that Dr. Horne had possession of the larynx, which was distinctly tubercular.

Dr. Bond said there were several points against the tubercular supposition; so far as he could learn from the husband, there was no loss of weight, no night sweats, and no cough. When he himself took the temperature for the first time it was normal. To-day, at the end of the examinations, it was 100°, but as she was at present suckling an infant four months this rise could easily be explained.

It was a firm feeling growth, and he had not palpated it that day. He saw the woman six days ago, when there was a red patch on the surface of the tumor. He did not know whether anyone had palpated the growth to-day. It was open to all to say that it might be a sarcoma, for there was some justification for this opinion. But there were no glands enlarged, and there was a history dating back thirteen months. In such a case one might on operating find the glands enlarged, although they could not be made out as enlarged from a surface examination. He intended to watch the patient, and would be glad to give a further report later on.

Glosso-labio-laryngeal Paralysis, with Complete Paralysis of One Vocal Cord and Abductor Paralysis of the other.

Shown by Dr. StClair Thomson. The case was specially interesting, as the progress of the laryngeal paralysis had been watched from an early stage. The patient had complained of thickness of speech for some twelve months. In November last there was only paresis of the abductor muscles. A month ago Dr. Thomson had tried to bring the case before the Society as one of complete double abductor paralysis. Since then the affection had made further progress, for it would be noted that the left cord was completely fixed in the cadaveric position, while the right cord failed entirely in abduction, and on phonation crossed the middle line in its attempt to close with the lifeless left cord.

Phonation was unimpaired. The vowel sounds are successfully produced, but there is distinct failure of some of the consonants, both labials and dentals. There is conspicuous speech defect owing to failure of co-ordination, yet it is difficult to detect any appreciable paresis of the muscles of the lips; the tongue can be protruded with apparent facility and without tremor, and the soft palate shows no failure in its reflex movements. He can inflate his cheeks, but cannot whistle. There is no dysphagia, but occasional spasm and coughing on drinking. The reflexes and pupils are normal.

The President said an important question in this case was whether or not tracheotomy should be performed, and it would be valuable to have the opinion of members on that point. There was scarcely any interval between the cords. He inquired as to whether there was much anesthesia of the larynx.

Dr. Watson Williams suggested that as the paralysis had developed so rapidly, the probability was that before very long, there being already complete paralysis on one side, there would be complete paralysis on the other side also. The danger of asphyxia would then be greatly lessened. Any operation might only still further complicate the case, and add a new danger.

Dr. StClair Thomson asked whether tracheotomy was in any way contra-indicated from the existence of anesthesia of the larynx, which was often present in these cases. Should he be hastening on a fatal termination by doing tracheotomy by reason of the food going down the trachea, which it already showed some signs of doing? The patient was in a rather pitiable state. He was at present able to earn his own living and talk a little, and when it was explained to him that even if operative measures were taken he would be able to talk no better than before, and would probably not be able to continue earning his living, he did not naturally seem inclined to undergo any operation. If anyone had any experience of a case of this sort in which tracheotomy had been performed, he would be very glad to hear of the results.

(To be Continued.)

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X. MISCELLANEOUS

Disturbance of Hearing and Speech of Hysterical Character. SHEPTELICH-
KHERTSENKS (I. K.) *Russk. Med. Vestnich, St. Petersburg*, 1902, IV., No.
5, 13-35.

Diseases and Injuries of the Neck. CHUGAYEFF (A.) *Russk. Med. Vest-
nich, St. Petersburg*, 1900, II, Nos. 4, 5, 6, 8, 9, 11, 12, 13, 14, 15, 16, 18, 19,
20, 21, 23; 1901, III, Nos. 9, 10, 11, 12, 13, 14, 15, 16, 17.

*Rheumatism as a Cause of Epistaxis in Children. SIDNEY PHILLIPS.
Lancet, Feb. 22, 1902.

Headache. A. H. COPEMAN. *Lancet*, July 20, 1901.

Nose and Throat Work for the General Practitioner; Adenoid Growths.
GEO. L. RICHARDS (Fall River, Mass.) *Internat. Journal Surgery*,
June, 1902.

SELECTED ABSTRACTS.

Epistaxis in the New-Born.—L. D'ASTROS.—*La Pratique Medicale*, April, 1902, No. 4.

Epistaxis, not uncommon in early childhood, is relatively rare in the newborn, and it constitutes in these a symptom of grave importance. It is very rarely abundant, usually very little, consisting sometimes only of a few drops of blood.

The conditions in which it is found are of three classes:

1. It may be secondary to a nasal infection, or to a coryza; especially may it appear in the course of a syphilitic coryza.

2. It may be secondary to a grave constitutional condition, infectious or toxi-infectious, without any special nasal localization. Hereditary syphilis may determine epistaxes independent of a coryza. This may also be the case in certain septic infections. It is also often associated with other hemorrhages, as of the skin, of the intestines, etc.

3. In some cases, epistaxis appears as a primary and localized manifestation in the newborn, which may previously have appeared perfectly well. These are the more interesting cases from a clinical standpoint. In the first place, epistaxis may be the first physical manifestation of hereditary syphilis. Excluding syphilis, epistaxis may form the primary symptom of an infection in the nasal passages, and limited for some time to the nasal passages; later it may reach the middle ear by way of the Eustachian tube. The extension to the lower respiratory passages is frequent, as in the development of bronchites and of broncho-pneumonias. Finally it may take the form of septicemia of the whole organism with its possible consequences (osteomyelites, convulsions, etc.)

We should therefore assign a great semeiologic value to epistaxis in the newborn; an important diagnostic value especially when it is dependent on an infectious condition, whether active or latent. The prognosis is always grave, not so much by reason of the abundance of the hemorrhage, as on account of the infectious condition which it may indicate.

SCHEPPEGRELL.

Asthma of Nasal Origin, Its Radical Cure.—P. J. H. FARRELL.—*Illinois Medical Journal*, May, 1902.

The author accepts the idea that there is a general nervous predisposition to the disease, and that the paroxysm is brought about by irritation in the upper air passages. Although the nasal cavities may disclose nothing in particular at the time of examination, but if during an asthmatic attack an application of cocaine be made to a suspicious point, such as a turbinate resting against the septum, or a circumscribed edematous patch, the spasm would relax at once. In the author's experience 80 per cent of such cases have been entirely cured, the remaining 20 per cent benefited, by attention to some nasal condition.

STEIN.

The Controlling of Hemorrhage after Tonsillotomy.—HEERMANN.—*Archiv. fuer Laryngologie*, Vol. 12, No. III.

The writer cites case of a man, aged forty-six, who had a tonsil removed. Severe hemorrhage followed the operation, which would not yield to the ordinary methods, such as compression, etc. The hemorrhage was immediately checked when he resorted to the method which has been much in vogue for the past twenty years in the City Hospital of Cologne, viz., passing silk ligatures through the anterior and posterior pharyngeal pillars and tying them securely together. The patient suffered no inconvenience from the ligatures. The operation is not very difficult, with a properly constructed needle holder, and the writer recommends its being used more frequently, especially when the patient has reached a certain age, with a predisposition to hemorrhage, and medical aid cannot be obtained.

M. A. G.

Empyema of the Frontal Sinus.—H. BERT ELLIS.—*Medical Age*, May, 1902.

The author briefly reviews the history, anatomy, pathology and methods of treatment as found in all text-books on the subject, and closes his article by citing three cases illustrating the different methods of relieving the trouble.

STEIN.

Injuries of the Membrane Tympani.—SAML. G. DABNEY, M.D., (Louisville, Ky.)—*The Louisville Monthly Jour. of Medicine and Surgery*, June, 1902.

In this comprehensive exposition the principle conclusions arrived at are:

That the majority of ruptures are caused by boxing the ears, hence this method of chastisement should be condemned.

Injudicious efforts at the removal of foreign bodies are more dangerous than the body itself.

Persons with diseased Eustachian tubes run some risk in working caissons. The risk may be reduced by frequent inflations.

In cases of injury to the ears careful examinations should be made before using syringe or instillation, but a simple injury be converted into a tedious or dangerous suppuration.

In fractures of the temporal bone, or base of the skull, the diagnostic importance of a serous discharge depends upon the time of appearance. Immediate appearance means cerebro-spinal fluid; after 24 hours, probably due to inflammation of the middle ear.

F. C. E.

Complementary Menstruation from the Ear.—DR. CHARLES GRENOBLE, (France).—*Medical Bulletin*, January, 1902.

The subject was a woman fifty-eight years of age. Seven years previously it was first noticed that with the advent of her menses she experienced heaviness and congestion of the head, localizing itself finally in the left ear, with a very distressing sensation of fullness in that organ, intolerable buzzing, ceasing suddenly with the advent of the menses, and a discharge from the left nostril of an orange-red color and of extremely fetid odor.

Three years ago the discharge that had heretofore come only from the nose now also came from the left ear, also of the same color, odor and corresponding to the menstrual epoch, but with the addition of intense itching of the auditory canal.

Examination of the ear showed nothing abnormal excepting a small perforation at the posterior-inferior part of the drum membrane and almost complete anesthesia of all the parts. Hearing for low voice about half a meter. Inflation negative. No abnormality of nose or pharynx.

STEIN.

The Use of the Ice Coil in the Abortive Treatment of Acute Inflammation of the Mastoid Process.—E. B. DENCH, (New York).—*N. Y. Eye and Ear Infirmary Reports*, Jan., 1902.

This paper is largely a repetition of the author's previously expressed opposition to cold as an abortifacient of developed mastoid inflammation in which he has contended, as here "that any attempt to abort an inflammation within the mastoid by means of the local application of cold is an extremely dangerous procedure." However, the author is willing to forego his well known dilection for operative procedure in all mastoid inflammations, in certain cases "where the surgeon has the patient under observation from the very inception;" in such circumstances he thinks "the local application of cold may be of considerable value." In cases seen after the middle ear symptoms have existed for some time, he would institute free drainage through the external auditum meatus, and keep the parts as aseptic as possible, by frequent irrigation of the canal by injections of a mild antiseptic solution. At the end of 48 hours if the case has not progressed toward recovery, opening of the mastoid is indicated. In such cases there will be few not showing extensive involvement of the bone. Should healthy bone be entered the patient's recovery will not be jeopardized in the least, and in the obscure cases convalescence will be hastened by drainage.

F. C. E.

Report of a Case of Morphomania, with Extravagant Claim of Aural Disease.—FRANCIS W. ALTER.—*American Medical Compend*, February, 1902.

The patient was a woman of 36 years. First complained of a fullness and some pain in right ear, which led her to the employment of large doses of morphine for the relief of the symptoms. On examination of the ear nothing was found excepting a slight evidence of otitis media catarrhalis chronica. Hearing but slightly diminished. Patient complained of exquisite pain and tenderness over mastoid region. The author believes that in order to satiate the craving for morphine she created a seemingly valid reason, both to herself and her friends by complaining of the pain in her ear.

STEIN.

Action of Ozone in Whooping Cough.—DELHERM.—*Archiv. de Med. des Infants*, May, 1902.

The author has treated twenty-eight cases of pertussis by inhalation of ozone. He gives a description of the portable apparatus. In substance the following conclusions may be drawn: While ozone possesses decided antispasmodic properties, it is not a specific for whooping-cough. It should only be used during the paroxysmal, as it has no effect in the catarrhal stage. Three to four inhalations of ten minutes' duration should be given during twenty-four hours. It diminishes the congestive phenomena of whooping-cough, and decreases the number of attacks.

The number of attacks was not diminished in cases with bronchopneumonia involvement, but the period of the paroxysm was shortened and the violence of the attacks lessened. Ozone is not at all toxic and could be given in connection with other remedies, when the method was followed out as described.

M. A. G.

Anesthesia of Mucous Membrane, with 25 per cent Alcoholic Solution of Cocaine in Operations on the Nose, Pharynx and Larynx.—WROBLEWSKI.—*Archiv. fuer Laryngologie*, Vol. 12, No. III.

The author has much to say in favor of the anesthetic action of the alcoholic solution of cocaine. He had never seen any symptoms of cocaine intoxication, although his experience included some fifty children as well as adults. He claims that the alcohol is an antidote. The best method of preparing the solution is to place the cocaine and alcohol in a test tube, heating gently to the boiling point. The cocaine dissolves very quickly and the solution remains clear permanently. Considerable smarting results from the first application of the solution, but, by applying a weak, watery solution of the same drug this can be avoided. Complete anesthesia can be produced with a very small amount of the solution. The writer has applied it in operations on the nose and larynx, as well as for removal of tonsils and adenoids with satisfactory results.

M. A. G.

